Information Literacy Association
(InLitAs)

European Conference on Information Literacy (ECIL)

Saint-Malo, France

18-21 Sept, 2017

Editors: Sonja Špiranec, Serap Kurbanoğlu, Joumana Boustany, Esther Grassian, Diane Mizrachi, Loriene Roy, Denis Kos

Abstracts

The Fifth European Conference on Information Literacy (ECIL)

September 18th-21st, 2017, Saint-Malo, France

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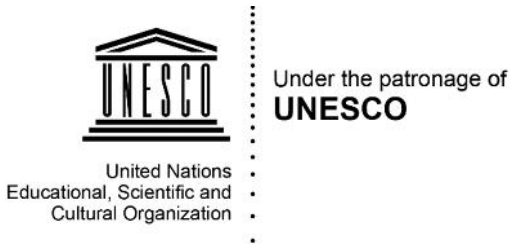

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Foreword

Dear colleagues, dear conference participants,

It is a great pleasure to welcome you to Saint-Malo, France for the 5th European Conference on Information Literacy (ECIL 2017) co-organized by Information Literacy Association (InLitAs), France, Department of Information Management of Hacettepe University, Turkey and Department of Information and Communication Sciences of Zagreb University, Croatia. As the previous years, many researchers, information professionals, media specialists, educators, have contributed to the success of ECIL by submitting around 340 proposals related to Information Literacy and more specifically to the theme of this year "Workplace Information Literacy". As it is known by everyone, information and data deluge affect all aspects of our life, and workplace is not an exception. How to be able to recognize information needs and identify, evaluate, and use information effectively in the workplace? Information literacy is an essential competency that needs to be mastered not only in our personal and educational life but also in our professional life (in the workplace). ECIL 2017 will be, as usual, a meeting place where we will share our experiences and knowledge, discuss new developments, and get inspired so we can move the issues related to information literacy one step forward.

This book of abstracts includes 253 submissions from 57 countries that passed the double blind reviewing process. It also includes the contribution of two keynotes and two invited speakers. Our keynotes: Bonnie Cheuk is partnering with the business and technology leaders to shape the future Digital Workplace experience for employees and the research of Andrew Whitworth is particularly focused on the collective decision-making processes that shape digital and information literacy in workplaces. Our invited speakers: Jean-Philippe Accart has many publications that focus on the relevance of Information Literacy during education and in the workplace, and Stéphane Goldstein has been a strong advocate for IL, and as such, brokered relationships between information professionals and other stakeholders.

Information Literacy Association (InLitAs) as the host and the organizer of ECIL2017 is grateful for the support of several organizations and institutions:

Our special thanks go to UNESCO and IFLA for their patronage. Their action to promote Information Literacy does not have to be proven.

We would also like to thank the research center Dispositifs d'Information et de Communication à l'Ère Numérique (DICEN-IDF) and especially Christian Bourret the deputy director. The University Paris Est Marne-la-Vallée (UPEM) – Institut Francilien d'Ingénierie des Services (IFIS) we thank for their partnership and support.

We also would like to extend our thanks to our sponsors Citavi and Unité Régionale de Formation à l'Information Scientifique et Technique (URFIST) and University Institute of Technology Paris Descartes for their financial support.

Our special thanks to Pierrette Drivet from the Local Organizing Committee for her continuous assistance.

Last, but not least, ECIL 2017 would not exist without the passion, energy, and hard work of many people. It is our pleasure to thank the members of Standing and Program Committees who made a great effort to ensure the timely review of the submitted manuscripts. We would like to thank Serap Kurbanoğlu and Sonja Špiranec for their support and help for managing abstract and full text submission and review processes. Since they initiated ECIL in 2013, it gradually became an excellent meeting place for Information Literacy specialists.

Nevertheless, I will borrow Hana Landová words to say, at the end, it is you, the conference participants, who create the experience. Presentations, questions, discussions, meeting old and new friends, having a glass of wine and dancing with the music – that is what makes ECIL the event we all love to come back. Thank you for that!

We hope you enjoy the conference, enjoy Saint-Malo, the enhanced city of privateers.

On behalf of the Local Organizing Committee,

Joumana Boustany

President of Information Literacy Association

Chair of the Local Organizing Committee

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KEYNOTES

Who Cares about Information Literacy in the Workplace?[1]

Bonnie Cheuk

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The ability to identify the need for information, to access, to effectively use and present information - from an individual or a group perspective - is critical for any knowledge worker to be effective in the workplace. Business executives strongly support the idea that knowledge workers need to continue to develop themselves, to further understand external customers' (or internal customers') needs, to draw on information and personal/collective experience to make decisions and present ideas. Information literacy enables employees to effectively undertake these activities and fulfil business goals. However, if information literacy is so important, why do we commonly hear only of the need to upgrade employees' leadership, communication, time management, project management, team management, lean/six sigma or digital skills, but rarely hear of employees being encouraged to attend "information literacy" professional development course? Does that mean information literacy is unimportant? Or do business leaders assume that all employees are equipped with information literacy skills from the education system? Do business leaders expect their employees to acquire information literacy skills on the job? In this presentation, Bonnie will introduce a refined, perhaps controversial, definition of information literacy in the workplace: "The phase Information Literacy does not mean anything to knowledge workers; IL are disguised within different functional labels, and business processes which are specific to the business context". Drawing on her wide experience helping global companies and senior executives establishing information/knowledge management strategy to become knowledge-driven companies, Bonnie concludes that the embeddedness of information in the business context makes it impossible to talk about "information" or "information literacy" out of context. This make the promotion of information literacy in the workplace extremely difficult (but not impossible)! Through three angles, Bonnie will highlight why information literacy have not gained much traction in the workplace context. If information professionals are aware of the challenges, we are in a better position to make a difference.

1. Think about knowledge workers working in these functions: R&D, innovation, sales, marketing, client services, IT support, product management, business analysis, they have to interact with information to carry out their work. Information literacy is obviously needed. IL is "hidden" in their respective function labels.
2. Knowledge workers face different demands at work at different times - ranging from the need to "drive efficiency/reduce costs" vs "increase effectiveness" vs "innovate" vs "handle crisis situation" - and in different context, information is defined and handled in different ways. There is no one-size-fit-all information literacy process/tools that work under all business scenarios.
3. The level of information literacy exhibited in a workplace is highly influenced by the company culture. Whilst organisations with open, networked culture value information literacy, those with hierarchical, command-and-control culture would not value information literacy as much.

Bonnie will share some real-life examples as to how information literacy can be introduced in disguised under the "change management" banner, focussing on delivery business-driven strategy and outcomes, helping employees to self-discover why and how they need to interact with information in their specific business context in order to deliver their business goals. Recommendations as to what IL practitioners, researchers and policy makers can consider to develop IL programmes in the workplace will be shared. So, who cares about information literacy in the workplace? Business executives who want to build information-driven business do, although they are not familiar with the IL label. Information professionals do, and we need to find a way to build the bridges and engage with the business in a language that they can understand. IL professionals are facing some serious threats and opportunities to make information literacy come to life in the workplace context.

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Keywords: *information literacy, workplace, management, knowledge workers*

[1] This keynote presentation is based on a book chapter titled "The hidden value of information literacy in the workplace context: how to unlock and create business value" in the "Information Literacy in the Workplace, edited by Marc Forster, published by Facet Publishing in Apr 2017.

Lessons from the Borg Cube: Information Literacy and the Knowledge of Difference

Andrew Whitworth

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The aim of this keynote is to explore the importance of *difference* for researchers and practitioners of information literacy. This is done through exploring the work of David Harvey, particularly his book *Justice, Nature and the Geography of Difference* (1996). Harvey's central task in that book is to explore how difference is *justly* produced: how we can accept the existence of, and make rational judgments between, different knowledges, created in different conditions, at different places and times.

Information literacy in the workplace has been defined as a set of practices, configured into architectures. the form of which is dependent on one's location in the information landscape. Information flows, architectures and relationships in workplaces have developed in highly uneven ways, despite the best efforts of information systems and business process designers. Almost inevitably, these differences contain within them the potential for the domination of some practices and workplace territories by others. These relations of domination are mandated and permitted by the movement of capital, and how it becomes affixed in particular places, giving *authority* to particular ways of thinking and judgments about relevance.

Two analogies from works of science fiction are drawn on to illustrate the dangers inherent in unchecked authority. *Star Trek's* feared aliens, the Borg, are a collective authority which has lost all human qualities. They cannot be negotiated with, and do not seek to learn; instead, they roam the universe appropriating both technological and biological capital by force. Marge Piercy's dystopian novel *Body of Glass* (1992) describes a world controlled by multinational corporations in which the few remaining independent communities have to defend themselves through constructing 'chimerae', complex digital architectures designed to conceal valuable information from the grasp of these capital-hungry behemoths. Both the Borg and Piercy's 'multis' have a wholly extractive relationship to information, and thereby to capital. Neither form of authority can *generate* it.

Yet these works of fiction also illustrate how the encounter between different places and times is an essential ingredient of creativity. Without knowing difference, power cannot be understood. New practices and, thus, information literacies could not be created. Harvey's critical geography can provide a framework for thinking about how these encounters can be made productive: a way forward that avoids the dangers of both the globalising and communitarian extremes explored by science fiction, and is sensitive to how information architectures have developed unevenly. The generation of capital takes cognitive work, and requires, therefore, not just the existence of connections, but the usage of them, for dialogue and eventual synthesis. Is information literacy in the workplace — and in each of the smaller work-places that comprise it — a quality that assists with the generation of capital, or only its extraction? The construction of contexts, or their destruction?

Information literacy practice will inevitably take different forms in different contexts. Whatever form information literacy takes in a (work)place, it will be the basis for how knowledge is formed there, and subsequently communicated to others. The one constant of IL, therefore, is its political character: it is how we set about 'knowing the difference'.

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Keywords: *difference, authority, power, practice, information literacy*

INVITED PAPERS

Information Literacy (IL) in the Academic Context: is there a Gap between Employability Competencies and Student Information Literacy Skills?

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This paper first presents the information literacy competencies in both public universities and institutions of applied learning in Switzerland. Based on the project "Information Literacy at Swiss Universities" launched in 2011, it shows how the Swiss Standards of Information Literacy were designed and applied. These six standards have since been supplemented by related learning objectives. In the second part, the author will answer the question formulated in the title in order to understand if those standards reflect the reality of the job market and the workplace. In conclusion, he analyses the reasons behind such a gap and proposes several solutions to bridge the gap.

Drawing on case studies, the author discusses the six previously-mentioned standards and their implementation in the Swiss academic context. It appears that most of the time librarians and libraries implement the standards themselves, participating at different levels in the academic program. Professors are involved in this process but to a lesser extent than librarians. The Faculty of Sciences of the University of Geneva is a good example: students in all programmes (e.g., biology, mathematics, pharmaceutical sciences, etc.) receive mandatory training at the beginning of each school year. They take part in onsite training or online tutorials, or sometimes both. In the end, they receive academic credit pursuant to the Bologna Process. The Ecole hôtelière de Lausanne in Switzerland, which offers a bachelor's and master's programme is cited as a different example. The school operates in another context with different results. In fact, because EHL is more focused on applied sciences, it does not offer the same level than a university degree. It does, however, facilitate access to the job market. EHL is well renowned throughout the world of hospitality management and business in general. During their studies, students need to compare results, numbers and facts found in databases, reports and books offered by the EHL Library. They must analyse the data and write reports and yet their information literacy skills are very poor. How is that possible for future managers? This article discusses these two examples at length and compares both institutions in detail.

Does it mean that there is a gap between what libraries offer in terms of information literacy and information learning and what skills students develop or fail to develop? What are the reasons behind such a gap? Are universities and, more specifically, universities focused on the applied sciences failing in this area? Both recent and older studies show that employees lose considerable time every week searching for information they need in order to solve problems and make decisions. Different reasons explain this waste of time and one of the more compelling is attention-deficit hyperactivity disorder (ADHD), which afflicts many people nowadays. Another reason is so-called information obesity. However, solutions do exist and information professionals hold the key to opening the door to information literacy. These solutions include the use of artificial intelligence to ease the information onslaught and teach kids or young adults effective search techniques at a very early age.

Keywords: *information literacy, student, university, case studies, failure*

Information Literacy and the Future of Work

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The contribution of information literacy to the workplace has been well document over the past three decades, and much has been written about the cultures, environments and practices associated with the handling of information in different work settings. But the nature of work in service-dominated economies is evolving, with the emergence of disruptive factors, enabled largely by digital technologies, which fundamentally change the relationship between workers and their occupation. For a start, the very notion of the workplace as a distinct physical location no longer has as much currency, as testified by the idea that virtual environments transcend workplaces as enablers of information literacy. More broadly than that, work is acquiring characteristics that are making it:

- less secure, more casualised,
- more entrepreneurial,
- fragmented in terms of attention, tasks, work-time and work-space,
- multiple and hybrid,
- dislocated from traditional workplaces, often characterised by home working,
- automated or at risk from automation.

Information literacy has a bearing on all these factors, as workers increasingly need to make the most of work contexts that are less stable and less predictable than might have been the case hitherto. Routine is less prevalent. Organisational structures are becoming flatter, and less rigid and hierarchical, with information and knowledge flows that move in all directions, rather than in linear fashion. Smart information capabilities are required to thrive in increasingly collaborative, flexible and highly responsive work environments – whether these are physical or virtual; and to navigate lifelong career paths that may be more complicated and sinuous than traditional forms of employment.

But at the same time, changing work practices may also increase precariousness and therefore the vulnerability of many categories of worker, and not just those who are less skilled. Relevant factors include the development of the gig economy, the proliferation of zero-hour contracts and the collection of data to monitor the performance and behaviour of workers in increasingly sophisticated ways. Information literacy (and to an extent, data literacy) can also play a role in helping workers, and their representative organisations, to better understand such phenomena; and to develop awareness of their rights when confronted with potentially exploitative practices.

The presentation will be an opportunity to reflect on how information literacy might apply to such evolving and future scenarios, and how it might contribute to equipping workforces to deal with rapidly-changing economic environments.

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Keywords*: information literacy, employment, future of work, disruption*

PAPERS

Collaboration and Empowerment in Transliteracy at School

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21st century skills required to be successful at school as well as in the workplace involve a high level of proficiency: information seeking and problem-solving strategies, *a posteriori* validation of information and critical thinking, social skills and collaboration, participation, and creativity (Voogt & Roblin, 2012). Teenagers are the first group affected by these requirements. "Complex and fascinating" (boyd, 2014) and deeply heterogeneous, their individual information practices beg questions. Far from the 'digital natives' myth, their uses are multifaceted, distributed among functions such as juvenile socialization, daily activities, and educational requirements (Cordier, 2015). Transliteracy, originally defined by Sue Thomas et al (2007), occurs as relevant to understand these information practices. Indeed, a holistic approach is needed to take into account the multiplicity of contexts of use and interactions.

The work described here proceeds from a program funded by the French national research agency (ANR Translit 2013-2016), focusing on how high-school students (15-16 years old) manage information with all the available media and tools, individually as well as collectively. Based on ethnographic methodology, the study was carried out between November 2013 and March 2015, in five French high schools during specific learning project based activities (10th grade, 5 classes of 30 pupils each).

The findings demonstrate that activities and knowledge management on the scholar workplace must take into consideration:

- complex information skills crossing personal competencies, representations, and self-esteem on the one hand, school requirements and context on the other;
- complex social interactions during information activities;
- postures and spaces encouraging horizontal learning processes between teachers and students in order to build a community of practice.

Our results highlight what is directly visible and also what remains implicit (Leander & McKim, 2003). They are then likely to be useful for teachers as well decision-makers when designing learning scenarios as well as guidelines or curricula.

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Keywords: *social interactions, transliteracy, information literacy, community of practice, high-school*

Environmental Literacy of Academic Librarians

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The importance of environmental literacy as well as environmental issues has long been recognized and became a major area of research in the twenty-first century. Environmental literacy, environmental awareness, and environmental sustainability are interwoven concepts. Environmental literacy is defined as the awareness and concern about the environment and its associated problems as well as the knowledge, skills and motivation to work towards solutions of current problems and the prevention of new ones (NAAEE, 2004).

Today, not only organizations but also individuals are expected to develop environmentally responsible behaviours and attitudes for their preferences, consumption, and purchasing habits (McBride, Brewer, Berkowitz and Borrie, 2013). On one hand, it is known that many organizations including libraries (Stark, 2011) are taking measures to reduce their damage on the environment. On the other hand, there is evidence that leaders in business, government, and civic affairs lack basic environmental literacy and often ignore the environmental impact of their decisions (Coyle, 2005).

Libraries today are incorporating green thinking into action within the green library movement by reducing carbon footprints resulting from their operations, developing more environmentally responsible practices and services, and helping communities they serve to become green and sustainable (Jankowska, 2011; Stark, 2011). Undoubtedly, green libraries and the green library movement require librarians with environmental literacy.

The aim of this paper is to discuss the importance of environmental literacy for librarians and present the findings of a study carried out on environmental literacy, attitudes, and awareness among academic librarians. A survey was conducted in Ankara, Turkey and 81 librarians from 13 universities (with a 48.5 percent response rate) participated in the survey. Findings have shown that the rate of environmental awareness level of participants was higher than the rate of adaptation of green practices. Data has also shown that green practices within personal initiatives such as using public transportation, reducing the use of plastics, and saving electricity indicated higher level of adaptation and certain green practices require institutional level of policy development and determination. The majority of the librarians has shown interest in participating in training programs on environmental themes.

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Keywords: *environmental literacy, green library, environmental awareness, environmental attitudes, environmental sustainability, university libraries, university librarians*

Lower Secondary School Teachers' Experiences of Developing Inquiry-Based Approaches in Information Literacy Instruction

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Inquiry-based assignments that require independent acquisition and use of information create challenges for schools' traditional instructional practices. Several studies indicate that instruction is often weakly designed, concentrates mainly on technical aspects, and leaves the crucial first stages of the process without adequate attention. (Limberg, Alexandersson, Lantz-Andersson & Folkesson, 2008) Research-based pedagogical frameworks such as Guided Inquiry (Kuhlthau, Maniotes & Caspari, 2015) have been developed for information literacy (IL) instruction but they are not widely used. Yet, there are teachers who continuously develop their instructional practice (Sormunen & Alamettälä, 2014) but we have very little research on that.

This paper reports a two-year case study in the classrooms of a lower secondary school teacher and her two colleagues who were engaged in enhancing their pedagogical practices in IL instruction. Guided Inquiry was introduced to the teachers but they were free to apply it as they saw fit. The aim was to create a better understanding of pedagogical challenges teachers face when they apply inquiry-based approaches as an everyday school practice. The research questions of the study were:

1. What kind of pedagogical designs do teachers develop for inquiry-based information literacy instruction?
2. To what extent were the observed pedagogical designs similar to the designs of Guided Inquiry?
3. How do teachers experience their possibilities and success in developing inquiry-based information literacy instruction in their everyday school context?

We followed three parallel classes for two years from the 7th to the 8th grade. The teachers planned and implemented three modules for information literacy instruction. Modules 1 and 3 were part of Finnish language courses; module 2 was integrated into a joint project of Finnish language and History. Modules 1 and 2 took place during the school year 2015–2016 and module 3 during the school year 2016–2017. The data consists of teacher interviews and the classroom observations. The focus was on the teachers' instructional practices and professional experiences.

The results show that the teachers are ready to apply diverse assignments in IL instruction. The teachers implemented four assignments and none of them was a traditional essay. The formats were a brochure, a presentation, a fictive text and a speech. Diverse assignments lead to diverse inquiry processes, designed activities and guidance. The teachers emphasized the goals of building background knowledge and keeping track of the information sources. In one of the modules cooperation between two subjects was utilized. The teachers applied some designs of Guided Inquiry. They devoted more attention to the first phases of the inquiry process. They also gave more space for pupils to choose topics of their own interest. Inquiry logs were introduced to the pupils. The teachers worked partly as a team, and also pupils worked in different assemblies.

The teachers felt that investing in the first phases of the process paid off: the pupils seemed to find topics of their interest. The pupils also seemed to gain from the cooperation between the two subjects. All pupils did not fill inquiry logs. However, the teachers saw that pupils who used inquiry logs managed to better synthesize information across sources than those who did not use them. All in all, the teachers felt that inquiry-based learning is fruitful and that the meaning of information seeking is something that should be emphasized to the pupils.

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Keywords: *information literacy, information literacy instruction, guided inquiry, teachers, lower secondary school*

Parliamentarians' Perceptions and Utilization of Information in the Social Media Environment

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Within the context of Oman, the Council of Oman can be a considered as the counterpart of parliaments or legislative assemblies in other contexts. Literature indicates that the Omani parliamentarians suffer from a dearth of accurate, precise, reliable, clear, comprehensive, up-to-date, and timely performance information that is essential to enable the council members to study draft laws at the appropriate time. Hence, such deficiencies hinder the members' ability to make felicitous, well-informed, and well-timed decisions. Such a difficulty arises from two main sources of impediments. First, there is an insufficiency of effective e-government services along with defects in the availability and user-friendliness of ICTs in order to obtain the required information. That is, data gathered by means of rudimentary channels do not fully satisfy parliamentarians' information needs. The second shortcoming emerges from the low levels of information literacy skills amongst Omani parliamentarians that adversely affect the efficacy of their parliamentary work. Consequently, the above-mentioned obstacles obstruct Omani parliamentarians' effective access to and utilization of information. The main purpose of this study aims at understanding the perceptions and utilization of information among the members of the Council of Oman. More precisely, the study attempts to determine whether the level of information literacy affects the parliamentarians' preferred sources of information to carry out their legislative roles. It also explores the impediments to access to reliable, clear, comprehensive, current, and timely information. A questionnaire survey is designed to measure the parliamentarians' information perceptions and utilization of information in the social media environment with reference to their information literacy skills. The target population includes all members of Oman Council (total n=168) divided into 84 for the State Council and 84 for the Consultation Council. This quantitative study is also followed by conducting selected interviews to seek in-depth views about the use of information by the parliamentarians in the social media environment. Only quantitative data are reported in the current study. The present study promises contributions on both levels of research and practice. In relation to research, little is known about the information needs and information seeking behaviors of the members of Oman Council and their utilization of information in the social media environment. On the level of practice, the study will produce a set of standards or criteria that can contribute to the design and enhancement of professional development programs that address the information needs of Omani parliamentarians as well as the promotion of their information literacy skills and abilities in this regard.

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Keywords: *social networking tools, social media, information literacy, information seeking behavior, information behavior, parliamentarians, Oman council, Oman*

Social Media and Information Literacy: Investigating the Perceptions of Undergraduate Students

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The continuous development of information and communication technology significantly affects the flow of information, its organization, and use. Today, information generally flows through two main channels: First, controlled and organized assets of knowledge represented by libraries, information centers, archives and digital repositories. Second, uncontrolled and freely-open platforms of information represented by the wider internet and vastly-growing Web 2.0 and social networking sites, which are tremendously enabled by advances in mobile technology. Information users have varying capabilities in determining the credibility and accuracy, and making the best use of information. Information literacy is, therefore, a crucial aspect for success among undergraduate students, as this group of users are expected to encounter enormous amounts of information daily, which becomes influential in their learning, personal lives and future careers. In light of the statements above, this study aims primarily at investigating the extent to which undergraduate students at Sultan Qaboos University have the ability to effectively use and deal with information flowing through social media platforms. More specifically, the study attempts to determine undergraduates' perceptions and attitudes, and their current understanding of information literacy and use of information in social media

A quantitative approach was used to collect data from undergraduate students. The study consisted of 1,142 completed questionnaires by randomly selected respondents. The questionnaire consisted of demographic data, followed by usage patterns, and then, perceptions on evaluation of information, information ethics, legal issues, and privacy of information in the social media. The content of the questionnaire was also reviewed by some experts from SQU and pre-tested with a small group of respondents before major distribution. The results demonstrated overall moderate levels of perceptions toward the investigated information literacy skills. This study signifies the importance of understanding perceptions of information literacy among undergraduate students in a specific socio-cultural context. The results can also be generalized to similar academic institutions worldwide. It is also hoped that the study's findings will assist in developing contextual training programs or information literacy quizzes to promote information literacy in the social media environment.

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Keywords: *information literacy, meta-literacy, social media, information behavior, Sultan Qaboos University, undergraduate students, Oman*

Research Data Literacy and Management Skills of Pakistani Researchers

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The concept of effective research data management (RDM) has emerged and influenced academicians and researchers during the last decade. Exponential growth of research data has grabbed the attention of information scientists, professionals, and researchers. The ACRL Research Planning and Review Committee listed RDM as 2016's top trend in academic libraries (ACRL, 2016) and considered it the result of a US Office of Science and Technology Policy (OSTP) memorandum that was published in February 2013 (Holdren, 2013). The digital revolution has facilitated the storage, sharing, and reusing of data. A large amount of scientific research data is created and collected in digital form, and all disciplines are increasingly using digital data. The challenge of handling long term research data and its reuse has emerged as significant area of research. Rice and Haywood (2011) found that national and international attention has been the focus of Research Data Management during the last decade.

This survey-based study is part of an international study aimed at examining the research data literacy and management skills of the academics and researchers of Pakistani academic researchers. The findings will be available to compare with other countries' findings.

The sample of the study includes academics and research students of four premier institutions in Pakistan namely:

- University of the Punjab, Lahore
- University of Engineering and Technology, Lahore
- GC University, Lahore
- National University of Science & Technology, Islamabad.

The first two universities are the oldest general institutions of education established during the Colonial Period while the other two are national universities of specialized disciplines.

The online survey has been launched and collection of data is in progress through an online questionnaire available on http://survey.docinfos.fr/index.php/225281?newtest=Y&lang=en. The questionnaire was designed by an international research team. The findings of the research will be helpful for policy institutions, higher educational institutions and training organizations in understanding the current levels of awareness and gaps in the knowledge of the respondents. It will be useful in developing appropriate data management strategies and training for the higher education community in Pakistan.

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Keywords: *data literacy, research data management, Pakistan*

Data Literacy in Spanish Universities

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Data literacy is an important ability required in the global knowledge environment and essential in the university research context. Data literacy enables individuals to access, interpret, critically assess, manage, handle and use data ethically (Prado & Marzal, 2013). On a basic level, data literacy is the ability to understand, use and manage data (Qin & D'Ignazio, 2010); a more general definition is the proposal by Ridsdale, et al. (2015) where data literacy is defined as the ability to collect, manage, evaluate, and apply data, in a critical manner.

In this communication, we will present the results of the application of a web survey of faculty and doctoral students from three Spanish universities, with the aim of learning their current levels of awareness and gaps in different issues of data literacy knowledge. For this research, we selected three universities of different size and typology: the Universidad Complutense of Madrid as an example of a large and traditional university; and two newer instituions, Universidad Rey Juan Carlos of Madrid of medium size and the small Universidad of Burgos.

We used an on-line survey with 24 questions that was designed by Serap Kurbanoğlu (Hacettepe University, Turkey) and Joumana Boustany (Paris Descartes University, France). The questionnaire was sent to the academic staff and doctoral students of the three universities. We received a total of 828 responses, 592 of which were complete. The data was analyzed statistically with IBM SPSS Statistics Methodology.

Most of survey respondents were academic staff (85,1 percent); 53,5 percent were male and 45, 5 percent female. Regarding of type of data files they use in research, the 90.7 percent of participants responded using standard office documents. When asked the type data file they produce in their research, the 84.3 percent respondents using standard office documents.

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Keywords: *data literacy, faculty's data literacy, doctoral student's data literacy, Spanish universities*

Copyright Literacy in Spanish Libraries, Archives and Museums

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In this communication we will present the Spanish results of a multinational research originated from a project funded by the National Science Fund of the Bulgarian Ministry of Education and Science on "Copyright Policy of Libraries and Other Cultural Institutions," and presented at ECIL 2014 (Todorova, 2014). In 2015 the Spanish parliament approved the last regulation on copyright legislation. In this context, we have considered it convenient to ask professionals regarding this information: the level of familiarity with the issue of copyright, how much they know about the policies and copyright practices in their country and in their institution, and what their opinions are in regard to the inclusion of copyright-related issues in LIS education. This study is the first of its kind in Spain and the results will be compared with those obtained in other countries.

Methodology

We used an on-line survey that was created within the framework of the above research project "Copyright Policies of Libraries and Other Cultural Institutions". The questionnaire was sent to 960 institutions from university libraries, museums, archives, the National Library, embassies and the Cervantes Institute, during the months of July to September of 2015. We received a total of 325 responses, 225 of which were completely filled out. The data was analyzed statistically with IBM SPSS Statistics.

Results

Most of survey respondents came from university libraries (57,4 percent); 26.1 percent from other kinds of libraries. A higher percentage of survey respondents were female (64.9%) compared to male (35.1%). One hundred and twenty-nine (55%) participants are familiar with national copyright law, creative commons licenses (56%), and open access, open data, open educational resources (61%). Least familiar topics were clearing rights, international regulation and International institutions. Sixty eight percent of our participants responded that they were "very good or excellent in awareness of issues related to intellectual property or copyright". More than 96% of the participants support the inclusion of intellectual property issues in the curriculum and continuing education of Library and Information Science. With respect to the question regarding which is the most appropriate level for introducing Intellectual Property issues, 92.3% of participants chose the undergraduate level.

These findings suggest copyright literacy levels in Spain are, in fact, moderately good. However, there is a need to increase information and knowledge of copyright issues in the sector, since copyright issues are already and will continue to be in the future an even more relevant part of the information professional's expertise, and this is emphasized by the need to educate students in this respect.

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Keywords: *copyright literacy, Spain, LIS, libraries, archives*

Scholarly Information Seeking Patterns of Academic Engineers and Technologists

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Problem Statement

Increasing use of the web and availability of electronic information sources has changed the way academic engineers and technologists seek information for scholarly tasks. They are using e-journals, databases, and search engines more than library physical collection in today's digital environment. Studies had been conducted (Engel, Robbins and Kulp, 2011; Yitzahki and Hammershllag, 2004) to investigate both academic and practitioner engineers' and technologists' information seeking habits. However, few studies were conducted to investigate academic engineers' scholarly information seeking particularly in relation to e-journal use patterns in both developed and developing countries. There is a need to study academic engineers' and technologists' scholarly e-journals use behavior particularly in the Pakistani scenario.

Research Questions

- What are the most used and least used information sources by engineers and technologists in their teaching, research, and keeping up-to-date activities?
- What are engineers' purposes for using e-journals?
- How do engineers identify, access, and search e-journal articles?

Methodology

The design of the study is quantitative and follows a survey research methodology. The University of the Punjab was taken as a study site. It has thirteen different faculties and the faculty of Engineering and Technology comprises six departments and institutes. The self-administered questionnaire was distributed to full time academic staff of the engineering and technology discipline. The targeted population comprised of 81 academic members. About 17 academic engineers and technologists were on leave and 40 faculty members responded with a response rate of 62.5 percent. The questionnaire was distributed personally and with the assistance of information professionals of respective departments. The validity and reliability of the questionnaire was established before final distribution.

Findings

The results of the study showed that academic engineers' and technologists' most used sources were e-journals and e-books among all print, electronic, and informal sources. A majority of the academic engineers also depended on discussion with colleagues as second most used information source followed by e-books and e-journals. Academic engineers and technologists accessed e-journals and articles through avariety of sources. The most used sources were general search engines (Google, Yahoo, Alta Vista, etc.), Google Scholar, and Open access e-journal websites. Higher Education Comission subscribed e-journals' use was less as compared to open access sources of e-journals and articles.

Significance of the Study

The findings will be helpful for information professionals in the Faculty of Engineering and Technology in reviewing their collection management policies in relation to print and electronic information sources.

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Keywords: *academic engineers, e-journals, scholarly information seeking, technologists, University of the Punjab, use patterns*

Enhancing the Quality of the Library Processes – Benchmarking Workplace Information Literacy, Numeracy and Communication Practices in Two European University Libraries

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Purpose

The aim of this paper is to investigate how two European university libraries have utilized communication tools to guarantee a high level of information literacy and numeracy among academic librarians in order to increase the quality of the services. The paper is based on data about the communication tools implemented and used in the selected institutions.

Methodology

A qualitative research based on interviews to library staff has been conducted in two academic libraries Universitat Autònoma de Barcelona Library (UAB) Barcelona, Spain and University of Eastern Finland Library (UEF), Finland to compare the approaches to this process in each of the institutions. Each communication tool has been defined and compared their uses at each library and its role in their PDCA (Plan-Do-Check-Act) circle. The main emphasis has been in finding out how these tools have helped middle managers in implementing the strategic plans and how the communicative tools have helped in staff involvement. The content analysis based on the PDCA framework was used in the analysis of the interviews (Balagué & Saarti 2011).

Outcomes

The library staff has a lot of data available to help them in improving the quality of the library service, but they are not always aware of these possibilities for decision making in everyday working practices, whether due to ignorance or lack of skills to utilize them (Cox, 2015). A low use of data resources for management could lead to the library not being able to offer quality services, or in the rapidly changing operational environment, the library's services may become outdated.

Communication tools play an important role in enabling all the staff to know about the internal information managed by the academic library (Bats, 2012). This helps them in utilizing it and transforming the knowledge gathered into increasing the quality of the library's services (Blessinger & Hrycaj, 2013). The study identified main implications in the institutions investigated where their internal communication was a facilitator of library management's strategic goals, and also implicated some factors related to the communication tools that enabled the use of data management for the improvement of the library's services.

The workplace information systems and their valid implementation for active use can help in the organization's strategy work. It also enhances the quality of the library's service processes.

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Keywords*: quality management, communication, library staff, academic libraries*

Information Horizons of Croatian Physicians

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Purpose

The purpose of this paper is to present a small-scale pilot study of information horizons of Croatian physicians, more precisely, general practitioners (GP) and specialists, with the aim of determining whether there are differences in information sources they use considering the differences in their medical practice. Information horizon is a theoretical framework proposed by Diane Sonnenwald (1999) with a purpose of closer exploration of human information behavior.

A systematic review of 19 studies (Dawes & Uchechukwu, 2003) found that the most frequent sources of information for American physicians are text sources. The second most frequently used source of information is asking colleagues, and only one study found electronic databases to be the primary resource. A Croatian study from 2008-2009 had identical findings (Markulin, 2014). Dawes & Uchechukwu (2003) concluded that the wide variation in information seeking behavior implied a need for further categorization of information need and information sources of physicians.

Design/methodology/approach

This paper looks at the information horizons of Croatian GPs and specialists with the aim of determining whether they differ from the findings of previous studies.

In the study, we will use semi-structured interviews with the critical incident technique as Sonnenwald proposed (1999), map drawing technique proposed by Savolainen and Kari (2004), and a short initial questionnaire. In May 2015, we interviewed five physicians and we intend to interview an additional five in March and April of 2017. Altogether, the sample will contain five GPs and five specialists from Osijek, Croatia. Respondents will be asked questions that include the last time they had an information need which they acted upon, difficulties they encountered, feelings associated with the information searching, types of information sources they used. In addition, they will be asked to place the information sources in mental maps according to their importance and frequency of usage.

Originality/value

In Croatia, there are a few papers on the information sources used by Croatian physicians, but no one has written about their information horizons. Therefore, we believe that these results will be interesting for both Croatian and international audiences.

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Keywords*:* information behavior, information horizons, information sources, mental maps, physicians

Measures of Self-Efficacy among Healthcare Professionals to Perform the Different Tasks Involved in Conducting Internet Search

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Objectives

This study was conducted with an objective to measure the ability of healthcare professionals (HCPs) and their perceived level of confidence in performing the different tasks involved in conducting Internet searches.

Methodology

A cross-sectional survey was conducted in 36 District Headquarter Hospitals (DHQs), 89 Tehsil Headquarter Hospitals (THQs), 293 Rural Health Centers (RHCs), and 2455 Basic Health Units (BHUs) in Punjab, Pakistan. The survey population comprised of rural HCPs (physicians, surgeons, and gynecologist). A set of 11 statements were asked in order to measure respondents perceived self-efficacy. They were asked to make two responses against each statement: (i) could they perform the task if they wished to? 'Y if yes and 'N' if no in the "CAN DO" column; and (ii) for each task, indicate how confident they feel of their ability to perform it.

Using a quota sampling the researcher divided the population into four strata: HCPs of BHUs (stratum A), RHCs (stratum B), THQs (stratum C), and DHQs (stratum D). In order to meet the minimum number of required sample size (n=357), 9 percent sampling proportion from each stratum was drawn. Almost 2000 phone calls were made to HCPs in order to seek their participation in the survey, of which 1204 HCPs agreed to participate in the study. Of the 1204 HCPs, 396 filled the survey with a response rate 32.89 percent after three follow ups with a gap of two weeks. An online link of the survey was sent to 660 doctors randomly through WhatsApp, out of which 118 responded with a response rate 17.87 percent. The collected data was analyzed using Statistical Package for Social Sciences (version-20). Both descriptive and inferential statistics were applied to analyze the data.

Findings

The mean values of the HCPs' responses to the eleven statements ranged from 1.66 to 2.30 indicating that majority of the HCPs were "little confident" in performing the tasks involved in conducting an internet search (for example: 'determining the appropriate keywords to use in the literature search', and 'identifying the major requirements of the search from the initial statement of the topic'). A statistically significant difference with a small effect size existed in the ability of HCPs of different healthcare facilities in performing the tasks involved in conducting internet searches. HCPs from DHQs and THQs perceived a greater ability to perform the tasks as compared to HCPs of BHUs, RHCs and any other category. Age and working experience were significant factors as to HCPs' perceived ability in conducting Internet searches. HCPs in the age group 21-30 years perceived the greatest ability to perform the different tasks involved as compared to HCPs of older age groups. HCPs with the least clinical experience (under 5-years) perceived the greatest ability to perform the different tasks as compared to HCPs groups with more clinical experience.

Conclusion

The results of the study concluded that majority of the HCPs were able to perform the different tasks involved in conducting Internet searches. However, they had very little confidence in their ability to perform these tasks. The results of the study reveal a need to provide trainings on effective information skills through information literacy programs in order to increase the awareness, knowledge, skills and level of confidence among HCPs when performing the different tasks involved in conducting internet search. It will help HCPs make informed patient care decisions that will eventually improve the community health outcomes.

Keywords: *healthcare professionals, self-efficacy, internet, use*

Measure of Healthcare Professionals' Behavioral Outcomes Using a Social Learning Theory

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Objectives

The provision of healthcare information in rural practices is likely to improve its access, but the use of information is a behavioral phenomenon. It requires different strategies to influence the behavioral changes. Therefore, this study was conducted with an objective to measure the healthcare professionals' (HCPs) behavioral outcomes (knowledge, attitude, intentions, and behaviors) about specific health information resources available online.

Methodology

A cross-sectional survey was conducted in 36 District Headquarter Hospitals (DHQs), 89 Tehsil Headquarter Hospitals (THQs), 293 Rural Health Centers (RHCs), and 2455 Basic Health Units (BHUs) in Punjab, Pakistan. The survey population comprised of rural HCPs (physicians, surgeons, and gynecologists) working in primary and secondary healthcare facilities of Punjab province, Pakistan. The data was collected from 517 HCPs through a questionnaire using a quota sampling on variables important to the social learning theory (behavioral capability, expectations). Five-point Likert type scale from 'strongly disagree' to 'strongly agree' were used to measure the HCPs' attitude, intentions, and behavior. A questionnaire was first pre-tested with five experts and then pilot tested on a sample of 15 HCPs from a target population. Cronbach's alpha coefficients showed high content reliability and internal consistency of the questionnaire. The collected data analyzed using Statistical Package for Social Sciences (version-20).

Findings

The respondents' behavioral outcomes (knowledge, attitude, intentions, and behaviors) were measured on important variables related to social learning theory. The knowledge of the respondents about online resources and services were measured on six statements. They were asked: "do they know about PubMed"? Of the 415 respondents, only 105 (25.3%) answered "yes" and majority 310 (74.7%) responded "no". The respondents who knew PubMed were asked the follow-up questions (to log onto PubMed, they need special software). Of the 92 respondents, 15 (16.3%) responded "yes" and 77 (83.7%) responded "no" that they need a special software to log onto PubMed. All six statements related to attitude received mean scores between 2.95 to 4.21 indicating that the majority of respondents agreed that "PubMed is an essential tool for my work" ($M = 4.21$, $SD = .632$), "the Internet is an essential tool for my clinical practice" ($M = 4.19$, $SD = .693$), "compare to other Internet sources for healthcare information PubMed is beneficial" ($M = 4.12$, $SD = .602$). The mean values of the HCPs responses to all the four statements related to intentions ranged from 3.65 to 3.95 indicating their intention to use PubMed and HEC digital library weekly. They also agreed to consult PubMed and HEC digital library for finding answers to clinical problems. The majority of the respondents were "reasonably confident" in their own ability to find information on the internet. A parametric statistical Analysis of Variance (ANOVA) indicated a significant difference in the self-efficacy of HCPs of five different healthcare facilities (BHUs, RHCs, THQs, DHQs, and Others), $F(4, 380) = 6.515$, $p = .000$. The majority of the respondents were "reasonably confident" that the Internet has the information they need.

Conclusion

The results of the study concluded that majority of the HCPs' knowledge of online healthcare information resources is limited. However, their attitude and intention towards using the online healthcare information resources for day-to-day clinical practice is positive. The study recommends a launch of promotional and educational activities through which HCPs' interest and awareness about online healthcare information resources and services could be improved.

Keywords: *healthcare professional, behavioral capability, social learning theory, information resources*

Print Versus Electronic Reading Preferences in South Africa: a Case Study at Three South African Universities

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This paper provides three further data sets, from three universities in South Africa, for the Academic Reading Format International Study (ARFIS) project Research within the ARFIS project has been reported at previous ECIL conferences (2014, 2015 and 2016) (see, e.g., the programme for ECIL 2016), and in various academic journals. Originally developed as a single institution survey in 2014 by Diane Mizrachi (Mizrachi 2015), it was expanded to a multi-country survey, viz. 19 countries for ARFIS 1 in 2015, and 13 countries for ARFIS 2 in 2016 (ARFIS 2016). ARFIS 3 was launched at ECIL 2016, for reporting at ECIL 2017.

Three researchers from South Africa, at the University of Pretoria (UP), the University of Zululand (UniZulu) and University of South Africa decided to do the research on their campuses to obtain data about the reading preferences of a sample of South African students. The three universities represent different educational environments in South Africa. The University of Pretoria is a large city university, with about 55,000 students; the University of Zululand is a rural university with more than 16,000 students, and Unisa is a distance education university, with its main campus in Pretoria, but a number of branch campuses world-wide, with about 450,000 students. Different groups of students will be targeted at the three universities:

- At UP: first-year students that do a compulsory computer/information literacy module (who have only e-books as course materials), as well as a representative sample of students form the Department of Information Science, at undergraduate and post-graduate levels;
- At UniZulu: first year students that do library orientation, as well as senior students across various faculties;
- At Unisa: students doing a first-year module on "Developing information skills for lifelong learning".

The standardized questionnaire of the ARFIS project will be used to collect data. This paper will present the results from the individual universities. The data from the three universities will also be aggregated, analysed and compared to previous ARFIS results, as reported by Mizrachi et al. (2016). The data, the first from Africa, will, in addition, be made available to the ARFIS team to integrate into the larger data sets of the project.

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Keywords: *ARFIS, academic reading format international study, South Africa, University of Pretoria, University of Zululand, UniSA*

Developing Information Literacy Skills in Dependent and Disadvantaged Circumstances: a Transitional Approach in the Digital Health Context

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Objectives

The purpose of this paper is to advance our understanding of approaches to information literacy skills development in disadvantaged (socio-economic) and high risk (health and wellbeing) circumstances, and in particular, design of meaningful interventions in the situational context. We report on work with young mothers from areas of multiple deprivation, seeking to better understand their information behaviours, and the factors influencing their selective and infrequent engagement with Public and Third Sector information services and resources, and the development of a transitional approach to digital access and use.

Eisenberg (2008) highlights three components to effective information literacy programs: information process; technology in context; and tasks based on real needs. We examine each of these in practice, asking: what are the information needs of young disadvantaged mothers; what are the appropriate digital sources to meet these needs; and given literacy and access issues, what would be an appropriate design and approach to interventions? The work addresses enduring issues of information literacy, digital access and use, and responds to calls for 'person-based' and "persuasive" approaches to digital health interventions (e.g. Yardely et al, 2015), and recognition that "more work is needed to create successful [digital health] engagement strategies" (e.g. O'Conner et al, 2016, p1).

Methodology

Our overarching theoretical framework brought together theories and models of information poverty and social capital to better understand shared aspects of social integration (understood as access, participation, engagement). Our detailed design incorporated semi-structured interviews, digital services analysis, evolutionary prototyping and exploratory focus groups, designed to: identify information needs and behaviours, appropriate digital sources, and develop and trial a tailored digital resource for the participants, young mothers from areas of multiple deprivation, and their support workers.

Outcomes

We evidence limited progress in addressing enduring digital divide issues. We report young mothers as having multiple, complex, interrelated, and at times competing information needs, often individually sourced via multiple agencies and systems not easily found or navigated. In addition, and in relation, there is an often critical dependency upon support workers as information intermediaries, particularly when seeking information from external (non-interpersonal and/or digital) sources. The tailored digital portal is found to provide useful access to trusted online information for young mothers, but usage is likely to be extremely low without systematic intermediary intervention, which given limited existing digital interactions, would, for many, begin in the physical space. Viewed as a process of digital transitions, the portal can be used by intermediaries to direct young mothers to tailored and trusted online sources of information, and as a tool to discuss and develop information literacy skills in an interactive and meaningful manner, developing independent information behaviours over time. A holistic transitional approach to systematic digital interventions is presented and discussed.

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Keywords: *information literacy; information behaviour; design thinking; digital divide*

News, Fake News, and Critical Authority

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The purpose of this proposed work is to present a theoretically and methodologically sound grounding for the critical apprehension of what constitutes authoritative news and news sources. The presentation will demonstrate clearly that there are variations in reports of news: intentionally objective news items ("intentionally" in that there is a deliberate attempt at objective reporting), unintentional error in new items ("unintentionally" mistaken), and intentionally false news items ("intentionally" in that there is a deliberate effort to deceive readers). The proposed work will focus on the first and third of the possibilities. Within the functioning of information literacy, it is argued, there is an obligation to recognize the intentionalities for what they are—objective reporting and efforts to deceive. Ultimately, the presentation will suggest ways to realize that obligation.

The theoretical grounding for the proposed work is based in James Williams' (2016) process philosophy of signs. His is a variation on traditional semiotics, where it is presumed that a sign is (primarily) fixed, and that the meaning and interpretants follow necessarily from the sign structure. Instead, in Williams' (2016) scheme, "signs are multiplicities and they acquire determinacy through processes of stabilization and destabilization, rather than from externally imposed identities" (pp. 12-13). Another way of defining this process structure is to say that a sign does not have an ontological being simply by virtue of its expression. A sign is a product of selection processes that lead to interpretation; the selections are complex and variable, but are products of both linguistic matters *and* intensive elements of attention, discernment, and analysis. It is this last feature of a process theory that applies most pertinently to the proposal's purpose and will provide a grounding for suggestions.

The search for news can result in locating reliable reports on a variety of topics. For example, if one wishes to see examples of the distribution of electoral votes in the 2016 U.S. Presidential election, one could examine the CNN Web site (http://www.cnn.com/election/results) and peruse a map of the states and the electoral votes pledged to each candidate. On the other hand, a recent study of students' abilities to evaluate news stories, conducted by researchers at Stanford University (Evaluating Information, 2016), concludes, "Overall, young people's ability to reason about the information on the Internet can be summed up in one word: bleak" (p. 4). The questions that arise include the reasons students have such difficulty. The present proposal explores answers to such questions, concentrating on the nature of 'authority'. The ACRL "Framework" (2016) defines Authority as constructed and contextual (p. 4).

Authority, within the context of the theoretical grounding, is not so much constructed as it is construed. As the product of a multiplicity of selections, there is an onus upon the reader to define the items in the set of selections. These factors will be presented as part of the work and will contribute to instruction for discernment of what may be given credence.

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Keywords: *metaliteracy, semiotics, information literacy, fake news, media literacy*

Information Literacy Quest. In Search of Graduate Employability

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Purpose

The goal of this study is to investigate the correlation between graduate employability and information literacy (IL). Previous research (ECIL2016) in investigating employers' understanding of IL skills and competences has shown lack of communication between employers and the IL field. In order to understand the reasons of this communication gap and develop communication strategies we researched the scientific communication in the employability and IL domains.

Methodology

In order to identify structure and dynamics of scientific research in the two domains the following searches were performed on the World of Science database for the period from 1980 - 2016. The study involved conducting:

- Bibliometric analyses of scientific publications on topics of employability/graduate employability and IL;
- Visual analysis and comparison of characteristics of publication portfolio of areas of employability and IL; and,
- Co-citation cluster analysis and visualization with accompanied keyword analysis of most used terms of employability/graduate employability domain.

Findings

Research has shown that the domains of IL and graduate employability are not well connected. Further insights of those two areas is given through identification of research fields, top authors, major contributing universities, and countries. Major authors, journals, and terms were identified and visually analyzed in order to better grasp various aspects of concepts of employability with specific attention to the area of graduate employability.

The results of the research provide better understanding of concept of employability and the graduate employability domain enabling IL professionals to focus their research agenda and create more visibility of IL as the prerequisite for employability.

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Keywords: *employability, graduate employability, information literacy, bibliometric analysis, visual analytics*

Information Literacy for Heritage Education

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Information literacy in workplaces (Staii, 2013) concerns heritage professions, particularly the archives sector (Klein & Lemay, 2014). The methodologies used by archival professionals to digitize, preserve and present pictures to the public involve information skills. These professionals are presenting their work on digitized pictures to students. Working together allows to transfer professional gestures to young people. This context questions information literacy and heritage education. We analyze how archivists and students are searching and using information from pictures. One of the objectives of informational literacy is to establish a relationship between students and heritage through digital technologies. We demonstrate how information search and information use are necessary to document archives and to learn about it. Archivists are contributing to heritage education and students are learning how to create a digital heritage production from historical pictures.

We are using an ethnographic approach to observe students in a secondary classroom working with archivists over a school year. These observations are completed through an analysis of professional documents. We also interview archivists and students after their work. Several approaches are necessary in order to understand the actors' activity in a context of heritage education based on professional digital tools and resources. It also allows to understand information literacy in the organization of work around the production of heritage resources.

We first present the notion of information literacy (ACRL, 2016, Chevillotte, 2005) and the role of information in professional activity (Guyot, 2013). We secondly propose to consider the link between knowledge management, communication of cultural information and heritage education. Then, we present the context of the research, the methodology set up around the activity of archivists with students. Finally, we demonstrate how informational and documentary practices of archivists through heritage (Davallon, 2006) allows to teach information literacy to students. Students are competent to find and use information. The relationship with heritage is then constructed in the classroom through the experimentation of professional gestures and information activities. Students participate in the construction of heritage knowledge through digital production.

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Keywords: *information literacy, heritage education, archivist work, digital production, knowledge management*

Prediction of Academic Performance of the University Students through their Use of Library Electronic Resources and their Self-efficacy

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This study was conducted with objectives to predict the academic performance of the students through their use of library's electronic resources and self-efficacy. It also aimed at identifying the factors (age, gender, faculty influence, frequency of university library and ICT use, and self-efficacy) that influence the use of electronic resources among university students.

A survey was conducted at the Islamia University of Bahawalpur, Pakistan in which 307 students participated from five different faculties. A structured questionnaire was used to collect the data for this study on variables related to demographic information of the respondents, their use of library and library's electronic resources, self-efficacy, and academic performance. Self-efficacy was measured using a set of 13 statements such as: 'I can manage to solve difficult problems related to ICT use', 'I am confident finding solutions to any problem while using electronic sources', and 'I always stick to my aims to accomplish my goals'. Academic performance was measured using Grade Point Average (GPA) in each semester. A pre-tested questionnaire was administered among the population through convenience sampling, and data was analyzed using a statistical package for social sciences. Both descriptive and inferential statistics were used to analyze the data. Pearson Correlation Coefficient statistics was used to assess the correlation between the self-efficacy and academic performance, as well as to assess the correlation between respondent's age and their self-efficacy. Chi-square test was used to assess the level of association between gender and frequency of library's electronic resource's use, faculty influence and use of electronic resources, and frequency of university's library use and use of electronic resources. Linear Regression model was used to determine the influence of two independent variables self-efficacy and the use of electronic resources on a dependent variable, and university student's academic performance.

The results of the study concluded that the use of library's electronic information resources has a significant influence on the academic performance of the students. However, it has a negative influence on self-efficacy of the students' due to availability of wide ranging electronic information resources. The students feel overwhelmed getting the required information out of the flood of information. Therefore, they easily give up in the face of obstacles. The results of the study also concluded that self-efficacy is not correlated with age and academic performance of the students, however, it is negatively correlated with the use of university library's electronic information resources and frequency of university library use. The use of library's electronic information resources is correlated with the use of university's library, gender, age of the respondents, and faculty influence.

The results of this study are very helpful for university librarians, administrations and policy makers to understand the level of self-efficacy among students, its role in the use of library's electronic resources and influence on academic performance. The results of the study are also very helpful in understanding the factors such as age, gender, faculty influence, frequency of university library and ICT use, and self-efficacy that influence students in their use of electronic resources.

Keywords: *self-efficacy, electronic resources, academic performance, university library*

Research Data Management: Practices, Skills and Training Needs of University Researchers in the UK

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Creation, collection, and use of data have always remained a core area of research activity in any field and is described as the "glue of a collaboration" (Borgman, Wallis & Mayenik, 2012, p. 485); and the "lifeblood of research" and yet "data is a complex notion and not always fully understood even by the parties creating and using them" (Borgman et al 2012, p. 517). Nevertheless, benefits from data-driven activities and innovation are enormous (The data harvest, 2014; Beagrie and Houghton, 2013; Ball and Duke, 2015; RCUK, 2015). It is quite evident that, in order to provide adequate support for sharing and re-use of research data, we need development in several areas:

1. In building the appropriate ICT infrastructure, tools and technologies;
2. In building capacity for managing research data;
3. In developing appropriate regulations and policies governing sustainable research data management (RDM) practices; and
4. In training academics, researchers and students so that they can play appropriate roles throughout the RDM lifecycle.

This paper focuses on the fourth point mentioned above. It aims to answer the following research questions:

1. What type, volume and variety of data are sourced, created, used, and shared by researchers?
2. What are the current practices for research data management including data storage, coding, sharing, etc.?
3. Are there any associations between researchers' age, gender and experience and various issues and challenges associated with research data management?
4. And, what kind of training is needed for researchers in the context of research data management?

In order to find answers to these questions, an online questionnaire survey was conducted amongst university academics, research staff, and research students at universities in the UK. This paper reports on the findings of the survey in addressing the above questions. It also points out directions for future research needed for developing awareness and skills of researchers in various research data management issues and, in the context of OA data.

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Keywords: *research data management (RDM), data literacy*

Information Grounds in the Eyes of the First-year Information Management Students

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Objectives

The main purpose of this paper is to discover how the novice information management students perceive "their" information grounds, that is "social settings in which people share everyday information while attending to a focal activity" (Fisher, Landry & Naumer, 2007).

The idea of information grounds (IG) has been developed and empirically investigated by Karen Fischer and her colleagues since the late 1990s (Fisher & Naumer, 2006). Now it constitutes one of the most influential concepts in information behavior research, contributing to deeper understanding of everyday contexts in which information seeking, sharing and transfer occur (Fisher & Julien, 2009).

The ability to comprehend information behavior, including identification and interpretation of "encountered" or "visited" information grounds, makes a basis for – inter alia – development of one's information culture and literacy. It is thus interesting to determine what is – in this respect – "the starting point" of students – prospective information professionals, who in their future work will be not only facilitating everyday information flow and optimizing infomation grounds settings, but also shall be promoting/teaching information competencies, especially since there is no one dominant reason for them to study information management.

Methodology

The reported research has been empirical and exploratory in nature, based on a document/text analysis method. A convenience sample of 67 first-year information management students of the Jagiellonian University in Cracow was used. Those 67 students prepared – for their information behavior class purposes – short notes about some selected information grounds they had personally experienced, known or heard of. Their notes were entered into the university e-learning system and thus made a rich empirical material, that will subsequently be analysed – qualitatively and quantitatively – using the QDA Miner software, to find categories and patterns.

Outcomes

The first expected outcomes are identification and typology of information grounds as seen by the information management students. The typology shall embrace various aspects of IG, in line with Fisher's trichotomy – places, peoples, and information-related phenomena. It should also show what aspects of information grounds have been noticed by the students, for example – if the participants were able to see the affective factors. The results, of course, may not be generalized, but can offer a first, tentative insight into IG understanding by future information specialists.

Secondly, some teaching guidelines will be formulated to enrich the novice students' comprehension of information behavior, culture, and grounds.

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Keywords: *first-year students, information culture, information grounds, information professionals, students of information management*

Data Literacy: For a Mindful Management

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Context

The challenging intercultural scientific context of ECIL has enabled the University of Bologna workgroup on Information Literacy to participate in the ARFIS research in 2015. This year, the opportunity to move our research focus to the academic family of researchers to assess their awareness to the data management has thrilled us.

Aim

The goal is to identify any gaps in data management by researchers and to consider consequential training needs that literacy librarians can fill and cope. Researchers need support. The request made by several financing bodies to fill out a DMP is the first example to literate aware researchers in managing the data-flow.

The storage of data sets in a certificate repository is not an outdated topic. The research community still creates personal archives, often poorly interoperable and non-certified. Researchers produce an enormous amount of data and it is important to ensure it is sustainable to avoid duplication of effort and waste of resources.

Method

The survey, in the form of an online questionnaire on the Limesurvey platform, consists of 24 questions of which five are demographic (role, age, gender, subject area, years of experience).

We personalized our contact email, and we obtained authorization to send the invitation to participate in the survey to our 2777 professors and researchers. The open collecting period was: February 13-March 5, 2017.

In the first part, we included a link to the Frascati Manual OECD site as a standard of conduct for surveys and data collection, to facilitate researchers in the choice of their research area and at the same time to maintain correspondence with the rest of the data collected in other countries.

Answering the survey takes approximately 10 minutes. Questions to investigate include: data file used for the research; data volume; obtaining data procedures; obtaining methods from outside sources; type of data produced by their own research team; their own data archiving; possible collaborations and data sharing and any doubts or concerns with respect to the sharing of information with others.

Conclusion

We believe this study can provide a major new approach to the idea of ‘study services’ offered by academic libraries and valuable support to the research community by repository managers and data librarians. The added value that libraries can make to new scientific communication goes beyond the management of institutional repositories and focuses on two key aspects for the service: provide the expertise, and encourage interdisciplinary collaboration even among scholars.

Keywords: *data-literacy, international study, survey*

Evaluating Information Literacy Activity at a National Level: an Introductory Study

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Need and objectives

The development of performance measurement in information literacy is not new (Catts, R. & Lau, J. 2008) and the proposal aims to take this work forward. The proposer has considerable experience of performance measurement and customer focused service evaluation and has written two books (Crawford, 2000; Crawford, 2006) and numerous articles on the subject.

Methodology

To undertake performance measurement performance indicators are required. These are defined as: 'a numerical or verbal expression derived from library statistics or other data used to characterize the performance of a library' (Crawford, 2006, p. 15).

Performance indicators have to be designed with great care so that they measure what they are supposed to measure and must be drawn from reliable data. The proposal therefore sets out to offer initial guidance on future progress. It reviews as an example an area of activity at the national level where problems have been identified and to some extent addressed.

The proposal will focus on the interpretation and evaluation of a volume of data generated by the work of the Community of Practice, The Right Information: information skills for a 21st century Scotland over the period 2012 to 2016. The work of the project has recently been documented (Crawford, 2016). Its activities and aims include uniting all people in Scotland interested in information literacy both in and beyond the information profession, coordinating and raising awareness of good practice, expanding the information literacy agenda to include civic and democratic engagement, the use of information by young people, aligning information literacy strategy with the aims of the state, advocacy both within and beyond the profession including advocacy to key decision makers, addressing the challenge of digital inclusion, securing resources, engaging with professional bodies and developing a research and development agenda.

Outcomes

With minimal resources, the Community of Practice has succeeded in raising awareness of the importance of information literacy in Scotland but has been handicapped by a lack of funding and bureaucratic organisation. The presentation will address the reality of this situation using criteria derived from Horton (2011) and Whitworth (2011) which offer yardsticks for evaluation. The presentation will objectively review this work, reach conclusions about its value, and suggest performance measures which can be widely applied although derived from the Scottish experience.

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Keywords: *information literacy, performance measurement, quality management, service evaluation*

Exploring Information Literacy through the Lens of Activity Theory

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The theme of this paper is Activity Theory (AT) as a framework for explaining Information Literacy (IL) as a technologically mediated social practice. Its focus is a research project entitled Information Literacy for Democratic Engagement (IL-DEM). This project was funded by the IL group of the Chartered Institute of Library and Information Professionals in 2016 to explore how community councilors in Scotland undertake related information activities as part of their role as community representatives. AT is based on a activity system model in which subjects (people) use 'tools' on objects to achieve outcomes, while constrained by social/workplace contexts (Wilson, 2006, 2008). AT has been used in studies of a number of workplace contexts, for instance, use of mobile data by police (Karanasios, Vardaxoglou, & Allen, 2009), and in a variety of subject domains including Information Science (e.g. Detlor, Hupfer, & Smith, 2016). There are also examples of its prior use in IL research (e.g. Abdallah, 2013). However, to date AT has not been deployed in a project that considers IL in the context of hyperlocal democracy, that is, 'pertaining to a town, village, single postcode or other small, geographically defined community' (Radcliffe, 2012).

Data for the IL-DEM project was collected through semi-structured interviews with community councilors (n=19) across Scotland. Supplementary data were gathered from an online survey of community councilors, local authority officials and librarians, and through desk research. Interview questions were developed with reference to SCONUL's (2011) 7-pillar framework to establish the relative levels of IL amongst the main set of participants. Interviews were manually coded around the pillars and AT constructs. The main finding of the study is that despite the high level of education and self-efficacy of the participating community councilors, their democratic activities are not fully underpinned by information practices in line with the SCONUL pillars.

AT proved its value as a framework for analysis of participants' information practices, using an activity system to model how IL supports the subjects (community councils) to achieve their objectives (informed citizens). AT was also used to understand the impact of contradictions at various levels. A challenge of deploying AT in this way, however, was to identify the activity system, as information sharing can be multi-way and can change both the subjects and their environments. Other limitations include those common in qualitative research, for example, as related to sample selection. Alternative interpretations could support a model of multiple activity systems, or the process model proposed (albeit for information-seeking not sharing) in Wilson (2006). Overall, the use of AT revealed its value in supporting consistent analysis of data. It also provides for the analysis of the context in which activities occur. AT is thus a framework that can be usefully applied in IL research.

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Keywords: *activity theory, information literacy, hyperlocal democracy, libraries, lifelong learning*

Report of Results from a Survey of Science Literacy in Developing Countries

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Objectives

The survey investigated the need for redefinition of Science (or Scientific) Literacy (SL) in the developing world, to address fragmentation of approaches. In its early stages, the study sought to provide a definition of fields and terminologies most commonly associated with SL: Public Understanding of Science (PUoS), Public Appreciation of Science (PAS), Science and Society, Citizen Science and Health Literacy.

Method

Extensive desk research was followed by consultation with the NIDA (Network for Information and Digital Access) global network and individual stakeholders (including ECIL 2016 participants). Finally, an online call for good practice case studies was launched by NIDA and selected studies followed up (Davis & Priestley, 2016).

Findings

To function well in the 21st century, a person must possess a wide range of 'literacies' - in one definition: *people's knowledge, motivation and competences to access, understand, appraise and apply information in order to make judgments and take decisions in everyday life*. Some types, such as those for science and health, may be designated 'issue literacies'. For populations in the developing world, the need is often to address issues immediate to survival and life. The relationships between issue literacies can themselves be complex and may spawn sub-literacies, such as maternal health literacy, and climate change literacy. A common thread may be that all issue literacies tend to involve social, cultural and emotional aspects affecting the way in which people engage with them. The beginnings of a possible structure is suggested: multiple literacies or 'matrix' approach establishing the complementary nature of different types of literacy, leading to greater collaboration across 'silos'.

Conclusions

Aspects of life in developing countries upon which SL could have a beneficial impact, include: disease prevention, water management. urban safety and sanitation. agriculture and rural development. and diet and nutrition (NASEM, 2016). Consideration is recommended for supporting:

- carefully evaluated pilot projects, designed to strengthen the evidence base and stimulate adoption of successful practices;
- projects and activities to demonstrate ways of improving the supporting service infrastructure;
- service-level and technical activities designed to extend and standardise the basis for citizen science activities;
- intensified cooperation among strategic organisations[2] and at the policy level (OECD, 2015).

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Keywords: *science literacy, developing countries, maternal health, climate change, biodiversity, environment*

[2] For example, InterAcademies Partnership (IAP), the International Council for Science (ICSU), the Federation of Library and Information Professionals Working Group on Information Literacy (IFLAWGIL), the European Conference on Information Literacies (ECIL), FAO and WHO

Researchers Meeting Students and Communities: a Win-Win Agreement for Science and Society

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ISS School-Work Alternating System Working Group[3], CASA Project team[4] and Italy E-bug partner group[5]

Framework & Objectives

For centuries researchers have been concerned with the information dissemination among peers, disregarding other stakeholders who would most benefit from research results. Today, the need to communicate science beyond the scientific community is widely recognized, and citizens become part and parcel of the knowledge dissemination cycle. The objectives of this paper are (1) to show how researchers can contribute to fill the gap between science and society by communicating science outside the scientific community, using strategies, tools and languages that can be easily understood by lay people; (2) and to demonstrate the value of a multidisciplinary approach to research which needs to integrate scientific and social-cultural knowledge for a win-win agreement between science and society.

Methods

The Italian National Institute of Health (ISS) recognizes the strategic value of sharing knowledge with different targets and developed relevant actions in this regard. A selection of such initiatives is reported on to provide examples of researchers' commitment to contribute to the development of science literacy in society at large.

School-work alternating system. In 2015 a law introduced the alternating system requiring high school students to spend a period of time in a workplace (Italy, 2015). The ISS researchers considered this as an opportunity to make students aware of the value of health research through practical activities. (https://tinyurl.com/j84hsud). (1).

E-bug project. The ISS is partner of the project, involving 28 countries. The aim is to educate children and young people about the correct use of antibiotics, microbiology, hygiene and the spread, treatment and prevention of disease. Selected online material was translated and adapted to facilitate its use and adoption in Italy (2).

CASA project. An operational research and training project (Italy-Ethiopia cooperation) to improve the quality of care of HIV patients in Ethiopia. A training program in communication addressed to community health workers and nurses was designed in 2015, (www.casaproject.info). In 2016, 122 students were selected for training; 77 admitted to oral examination and 34 selected for additional training to become future trainers (3).

Final considerations

Researchers' commitment to improve science literacy will have a positive impact on both science and society.

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Keywords: *scientific communication, knowledge dissemination, training, research, science, society*

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Medical Students' Information Literacy Self-efficacy: Longitudinal Study-protocol Covering a whole Medical Curriculum

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Introduction

Information literacy (IL) and information literacy self-efficacy have been studied in diverse ways by several research groups. Different studies (Dale & Campbell, 2012; Eskola, 2007) noted the impact of IL integration within curricula. However, no research covers the evaluation of IL self-efficacy throughout a complete medical curriculum. Recently, the medical domain has been influenced by a more increasing digitization, requiring students to have more specific IL skills and adaptation of their education at different stages. Additionally, acting according to the principles of Evidence-Based Medicine is of the upmost importance and emphasizes the value of implementing IL education throughout the medical curriculum. This paper describes the study protocol of the longitudinal study of the evolution in IL self-efficacy among individual students as well as cohorts of students throughout (parts of) a complete medical curriculum.

Methods

A thorough literature study of IL self-efficacy within a medical context formed the basis of this research. Information literacy self-efficacy has been studied using a standardized IL self-efficacy-scale, developed by Kurbanoğlu et al. (2006). This original scale was enriched with ten specific medical items to evaluate medical-oriented IL self-efficacy. All medical students (mean n/year: 1192) from year 1-6 studying at Ghent University (Belgium) completed the survey. Data collection started in 2011 and ended in 2016 with a surplus qualitative study. Data will be analyzed statistically, paired (individual students) as well as non-paired (cohorts of students), and statistical tests will be performed. In this protocol, the literature study, the set-up and the context of the longitudinal study of students' IL self-efficacy within the medical curriculum will be described.

Conclusion

To our knowledge, no medical curriculum-based studies are available on IL self-efficacy. Moreover, no IL self-efficacy study exists of the same magnitude as the research described in this protocol. This study will allow us to look for cross-sectional as well as longitudinal results. The qualitative study at the end of the research will be performed to clarify some quantitative results. All results will be taken into account for further curriculum adaptation at the faculty level, which emphasizes the importance of organizational (curriculum) change based on scientific results. Furthermore, the results of this study could lead to guidelines for a more adapted IL self-efficacy implementation in a medical curriculum. In conclusion, the literature study and the elaboration of the study protocol are important factors when deciding how to conduct a quantitative, longitudinal research on a large population.

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Keywords: *information literacy self-efficacy, medical education, health sciences, medical curriculum, higher education*

Information Literacy and Information Accessibility – Distinctive Features of Information Security

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Introduction

The study analyses the concept of security, and the distinctive characteristics of this concept in particular, related to information literacy and to the opportunities to access various information intended for public use. Based on existing theories on security, perceived as a building block and a logical state of society, a natural pattern is analysed, associated with the level of information literacy of specialists who study security issues. This pattern occurs primarily in the depths of the conclusions in the process of the categorial definition and redefinition of the topics, related to the regulatory function of information security in the process of building and developing a culture of information transparency.

Background and problem oriented conclusions

The category of 'security' has been researched as a universal category, reflecting the essential aspects of existence of natural and social systems, mainly related to the measure and the transition from one situation to another of the respective tangible and intangible systems (Popov, 2003). The study is based on the main thesis that without the acquisition, availability, development and practical use of respective levels of information literacy, the so-called security professionals demean the category 'security' itself and turn it into a label and declarative concept, which gradually passes on to the 'dead zone' of scientific knowledge.

The study pays special attention to the regulating function of security. From this position, fusion between the desires and the possibilities for total transparency is made, a transparency accomplished on the basis of high level of information literacy, unrestricted access to public information, and the necessary regulatory activities of the state, ensuring the appropriate degree of general and information security on a national, regional or international level.

Results

Analysed problems give reason to sum up that acquiring knowledge and skills in the field of security necessarily requires reaching maximum levels of information literacy, which permanently transform into information competency. As a result, basic and upgraded knowledge is synthesized. Every specialist on security issues, depending on their professional orientation, must possess this knowledge in order to be functionally literate. Of course, this basic and upgraded knowledge, as conceptualization of the functional literacy, should be differentiated depending on the narrow experience and professional qualifications of specialists involved in the process.

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Keywords: *security, information literacy, functional literacy, competency, information access, information transparency, social systems*

Some Predictors of University Students' Information Literacy

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Research background and methodology

The aims of this study were: (1) to determine the predictive power of scientific literacy (SL), use of informationa and communication technology (ICT) tools, confidence using the Internet, and motivation, on the information literacy (IL) of university students; and (2) to explore how well those factors explain the change in IL, after a 45-hour compulsory IL course based on five ACRL standards (ACRL, 2000). One hundred and thirty-nine undergraduate students took pre- and post-tests on IL (Boh et al., 2016), a scientific literacy test (selected PISA 2006 items; OECD, 2007); as well as questionnaires on ICT tool use, Internet confidence (Šorgo et al., 2017) and motivation (7 subscales; Juriševič et al., 2016). Multiple linear regression was used to create prediction models for the pre-test IL level, and the post-course change in IL.

Results

The pre-test level of IL (mean 67.97 percent) significantly improved during the IL course, with a post- pre-test mean difference of 16.38 percent. All predictors together accounted for 33.3 percent of the variance in the pre-test IL level. Significant positive predictors included SL and some motivation subscales (such as self-confidence for learning), while some correlated negatively (external controlled motivation). ICT tools and Internet confidence were poor predictors of IL. On the level of the post IL change, the independent variables together explained 27.8 percent of the variance. Among significant predictors were SL, use of ICT tools and self-concept for learning. When adding the pre-test score as a predictor in the regression model of IL change, the total variance rose considerably (73.1 percent), but the unique effect of the remaining predictors was very small. Internal motivation played a suppressor role in all models. More detailed results will be presented and discussed at the conference.

Conclusions

Among the factors studied, the students' level of SL was most closely related with their IL. Extensive use of software and confident use of Internet had no considerable influence on IL, while the impact of different motivational aspects on IL varied. The results also suggest that the IL course was beneficial for all students, and particularly for those with poor initial levels of IL, and with a lower level of self-confidence for learning.

Acknowledgements

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Keywords: *information literacy, higher education, multiple regression, scientific literacy, motivation*

From Academic Plagiarism to Information Literacy: Mediation in the Ethical Use of Information

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A problem with plagiarism is that it has its roots in the most basic structures of the education system, some might even say that in Mexico it is a cultural problem. It is a systemic issue that needs to be addressed. Not only does plagiarism directly relate to copyright infringement and the issue of dishonest behavior, but it also raises the issue about what constitutes the ethical use of information (Menezes, Silva and Fernandéz; 2016). Plagiarism is a complex and common problem amongst higher education students that demonstrates unethical behavior but also a misunderstanding about the importance of recognition about the property of every intellectual work. This is an issue that has recently taken relevance and visibility on a greater level. This has urged institutional responses all over the country and, as a result, it is important to know the actions taken by the libraries, especially in four Mexican universities and colleges located in the metropolitan area.

The main purpose of this work is to explore at a national level the institutional strategies to combat academic plagiarism in higher education. The study pursues two specific objectives:

- To know the role of Mexican university libraries of higher education on the processes linked to academic plagiarism and how they might be related to ethical use regarding Copyright.
- To identify the librarian's skills related to copyright and intellectual property.

The proposed methodology is a descriptive and exploratory study of four public universities that provide education in social sciences and humanities: National Autonomous University of Mexico, College of Mexico, Metropolitan Autonomous University, and Autonomous University of Mexico City. This information is obtained through the collection of data from two sources: (1) a survey administered to the librarians to collect data concerning their skills, knowledge, and attitudes); and (2) the content revision of information literacy courses or workshops, related to copyright and the use of information.

To face this problem, academic and university libraries have had to develope new strategies on acquiring information skills. This is seen in the actions taken in the librarian field and reinforced content in courses about information skills. In particular, the new content has involved providing specialized courses to new students on how to use information, correct citations, textual quotations, plagiarism in the web environment, among other topics (Domínguez Aroca; 2012).

In addition, the new strategies assist the student in understanding many of the economic, legal, and social issues surrounding the use of information, access, and use information ethically and legally: "This involves an understanding of risk, an understanding that there are not fixed rules around copyright in many areas, and that it is not their role to sanction and police others' behavior but to work towards mutually satisfactory solutions" (Secker and Morrison; 2016). Finally, is important to analyze the relation between the responsibility of the librarian to stop this dishonest activity and to promote information literacy in order to achieve the ethical use of information and their success on its academic trajectory.

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Keywords: *academic plagiarism, types of plagiarism, copyright, information literacy, ethical use of information*

Data Literacy of Charles University PhD Students: are they Prepared for their Research Careers?

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Objectives

In recent years, the availability and volume of scientific data have grown exponentially. Research funding bodies encourage or even require open publication not only of the research results, but publication of the data involved as well. Data sharing is an essential component of the direction in which science is moving (Tenopir, 2015). This situation creates a need for training in data literacy, a set of competencies that can be defined as the component of information literacy that enables individuals to access, interpret, critically assess, manage, handle and ethically use data (Calzada Prado, 2013).

The situation in the Czech Republic in the field of scientific data and data literacy has not been assessed so far. The goal of our study, based on an extensive survey, is therefore to describe the creation and usage of scientific data in the Czech Republic based on the example of the Charles University in Prague. Charles University is the biggest university in the Czech Republic with more than 4000 academics and 6000 PhD students in a wide variety of subjects.

Methods and results

The research was carried out as a part of Data Literacy Multinational Study cooperation. We have used a Czech version of the data literacy questionnaire presented at the 2016 ECIL conference by Chowdhury (2016), and distributed it to Charles University academics and PhD students.

The questionnaire and its results can be divided into the following parts:

- production and use of data (types of data, volume of data etc.);
- attitudes to data sharing and data sharing behaviour;
- awareness of various aspects of data sharing (metadata, identifiers, versioning etc.) and data sharing practices.

Given the relatively high number of answers (1434 completed questionnaires, 811 from PhD students) we present a significant part of the results - an analysis focused on data literacy of PhD students from various disciplines and their preparedness for managing and sharing the research data.

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Keywords: *information literacy, data literacy, data sharing, data sharing practices*

Libraries as a Support of Informed Citizens – the Balancing Act between Libraries Good Quality and Austerity Measures

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In a time of exploding information possibilities, including "fake news", libraries, as guardians of the quality of information, have become even more important as never before. In our era, however, it is the guardians of confirmed information themselves and information literate citizens that must be enabled to decide what facts to rely on. At the same time, New Public Management (NPM) is changing the way libraries, both public and academic, are allowed to act in their local communities. The effect of the "age of austerity" with libraries being closed due to an ongoing economic crisis must also be taken into account. "NPM became the heading of two related but simultaneously rather different streams of reform: on the one hand aimed to improve the quality of the public service delivery on behalf of its customers and on the other hand with an emphasis on the need to downsize the public service, because […] there is no way out for the public sector but to leave everything to the private sector" (De Vries/Nemec 2013, p. 6). The changing circumstances call for new leadership and new leader roles in the libraries. To what extent are library leaders equipped to do this? How can libraries already in a squeeze between the demands for better service and less money find a way to train citizens in information literacy?

In this paper, the authors will present results of European studies on changes in libraries as a result of the implementation of NPM. (De Vries/Nemec 2013; Dobberke/Schönball 2014; Düren, 2009; Pors/Johannsen 2003; Saarti /Juntunen 2011; Skålén 2004). While it is evident that the environment and the libraries are changing, it is, however, not clear that the changes are going in only one direction, or how they actually will be impacting the need for more information literate citizens. The authors will conduct a pilot study in Germany, Finland and Norway, interviewing academic and public library leaders to find out how the austerity measures originating from NPM impact the citizens' training in information literacy, and what can be done to ensure efficient support of informed citizens.

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Keywords: *change leadership, information literacy trainings, leadership, support, new public management*

Five Years of Plagiarism School: Lessons & Impact

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Introduction

According to the International Center for Academic Integrity (n. d.), many people would be astounded by the number of university students who admit to cheating or plagiarizing on papers. Over the past 12 years 71,300 responded to surveys dealing with cheating and plagiarism. Of those 71,300 students, 68% reported cheating or plagiarizing. In 2012, Kent State University launched a unique program to address professor's growing concerns about student plagiarism. Plagiarism School is a remediation program that aims to educate students about plagiarism. At Kent State if a student has plagiarized and the professor believes it was unintentional, the student can be offered the opportunity of attending Plagiarism School. If a student successfully completes the program, then the original sanction (failing the assignment or even the class) is removed. Librarians were able to work with the university's faculty senate to incorporate Plagiarism School into the official Administrative Policy Regarding Student Cheating and Plagiarism (Kent State University, 2015). In addition to faculty senate, the library has also worked closely with the Office of Student Conduct; this has allowed for the collecting of data on students who have completed Plagiarism School as well as students who did not attend Plagiarism school and whether or not there were repeat offenders of the policy. Plagiarism School has been heavily used, which was unexpected by the library. Adjustments had to be made in the management of the program to accommodate the number of students referred to the program. The library has implemented new proactive measures to combat plagiarism. A number of workshops have been developed that address plagiarism, academic integrity, and citation styles. Another way the library is assisting students is by offering a service that allows student papers to be run through plagiarism detection software. Over the past five-years the librarians at Kent State have developed a comprehensive plan to deal with issues of student plagiarism. By taking an educational, rather than a punitive, approach the librarians are seen by the students as a neutral party in the issue of plagiarism and are able to forge relationships with students that last throughout their time as a Kent State student.

Objectives

- To introduce the concept of plagiarism school and how it was implemented across campus.
- To demonstrate how plagiarism school has helped students.
- To demonstrate that there is a normalized educational approach to deal with student plagiarism.

Methodology

The purpose of this study was to explore how plagiarism school has been implemented at Kent State University and how the library has evolved to meet the challenges presented. This paper uses a case study design. According to Creswell (2014), case studies are often used to examine and evaluate programs.

Outcomes

Participants will be able to take information on plagiarism school back to their home institutions.

Librarians will be able to discuss with teaching faculty how the library can help their students around areas of plagiarism.

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Keywords*: plagiarism, plagiarism school program, case study, academic partnerships*

Parents of Children with a Disability or Long-Term Illness: the Importance of Supporting their Media and Information Literacy

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Objectives

The aim of this research is to examine the media and information literacy of parents who have children with a disability or long-term illness. Media and information literacy allows the parents to "…access, retrieve, understand, evaluate and use, create, as well as share information and media content in all formats…" (UNESCO, 2014). The purpose is to get a good view of how their media and information literacy can be supported so that the parents will be better able to take advantage of the information that are available about the disability, the children´s quality of life, and their rights. The following research questions were developed: 1) What information do the parents need and how is their information need being met? 2) What influences the information literacy of the parents? 3) How can the parents' information literacy be supported?

Methodology

Qualitative method was chosen because it is considered useful to get a deep understanding (Creswell, 2007) on how parents act around information. Although qualitative methods do not allow generalization they are considered useful for better understanding phenomena about which little is known (Strauss and Corbin, 1990). Since this research examines aspects of information behaviour which few studies have investigated so far, international knowledge on the subject is lacking. The research was conducted with half-open interviews with 27 parents, 22 mothers and 5 fathers, who have a total of 29 children with either a disability or long-term illness, or in some cases both. The initial analysis started as soon as the interview had been conducted and the following interviews were then modified according to findings or themes that had begun to emerge as Bogden and Biklen (2003) suggest. Analysis of the data is based on grounded theory.

Outcomes

The information needed by the parents were classified in four categories; 1) Daily information which is needed to get through the day and cannot be ignored. 2) Information that add something to what the parents knew before and can make their life easier but is not vital to survive. 3) Deeper information - the outcome of purposeful information seeking, usually a search for a cure or a better treatment or even a diagnosis. 4) Information about rights, which is the hardest information to find for this group. To ensure that they can fulfil their role as parents of disabled children the participants must know where, and to which professionals they can turn to, in order to get information that is correct and comprehensive enough. In addition, the parents must make sure that they themselves provide the professionals with appropriate information about the children. The findings may further our knowledge of how parents who have children with a disability or long-term illness take advantage of the information that is available about the disability, the children´s quality of life and their rights. A better understanding of the factors that relate to their media and information literacy can identify ways it can be enhanced.

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Keywords: *caregivers, children, disabilities, media and information literacy, long-term illness*

Relationship between Everyday Health Information Literacy and Attitudes towards Mobile Technology among Older People

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Introduction

The use of mobile technology in health-related online services, also called mHealth, has increased. To benefit from mHealth services, people need competencies to find, evaluate, and understand health-related information in varying everyday life situations, that is, everyday health information literacy (EHIL). Research within this area, especially among older people, is scarce. In this study, we examine whether technology savvy older adults are more confident in their EHIL skills than those with less experience with technology. The aim is to provide knowledge on the relationship between EHIL and mobile technology use and attitudes towards it among older adults.

Methods

The data were collected with a paper survey conducted as part of a multidisciplinary GASEL (Gamified Services for Elderly) study, funded by the Finnish Funding Agency for Innovation for 2014–2016, that examined tailored and gamified remote services in promoting wellbeing and health of older individuals. The questionnaire was posted to a random sample of 1,500 home dwelling subjects aged 65 or more, living in Oulu area in Northern Finland. A variety of themes were addressed in the questionnaire, including a 4-item version of an EHIL screening tool (Niemelä et al. 2012) which is based on questions on opinions about and use of mobile technology. The questionnaire's response rate was 61 percent (n = 918). Statistical analyses include cross-tabulations with Fisher's exact tests.

Results

The mean age of the respondents was 73.4 ± 6.8 years, and 57.5 percent were women. Older people who had used tablet computers or smart phones without problems during the last 12 months were also confident in their competencies to assess the reliability of online health information, understand health terminology, and determine who to believe in health issues. Those with negative attitudes towards mobile technology were likely to find it difficult to assess the reliability of online health information ($p < .001$) and to understand health terminology ($p < .001$).

Conclusions

Older adults with negative attitudes towards or having problems or less experience with mobile technology are also likely to have poor self-estimated EHIL skills. There is a risk of marginalization and the results should be utilized in digitalization of services for older people, and they can be beneficial for decision-makers and software designers.

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Keywords: *health information literacy, use of technology, mobile technology, e-health, older adults*

Research Data Management: Experiences of Scholars in Finland

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Introduction and Contribution

The development towards open science including open data and open publishing, emphasize the importance of proper data management plans, tools and applications, and related practices. Accordingly, in Finland most universities have published their data management guidelines. However, the practices through which these ideas are embedded into scholarly work and daily tasks, are still under implementation or almost unknown to many scholars.

In Finland, this scene is quite promising according to a new Nordic report published by NordForsk (2016). It indicates that the status of open access to research data here has been implemented in a large-scale Open Science initiative and the other Nordic countries are following (NordForsk 2016). Moreover, a tool for smart data management planning for Finnish research organizations, called DMPTuuli, has been introduced and taken into use. It is based on a British data management tool and applied, for example, in the funding process of the Academy of Finland. (Tuuli-project 2016.) The *Tuuli* project is funded by the Finnish Ministry of Education and Culture and coordinated by Helsinki University Library. There are approximately 20 Finnish research organizations involved in the project including over 40 experts in its working groups and subgroups. The purpose of this paper is to present the preliminary results concerning Finnish, Swedish and English speaking academic researchers' and doctoral students' experiences of open data management in Finland. The results could be beneficial for universities and other research organizations in implementing research data management practices.

Methods

The Finnish study reported in this paper is part of an international collaboration related to research on Data Literacy and Research Data Management. The survey instrument was created by an international group of researchers from England, Turkey and France. The survey instrument consists of 24 questions, arranged into two themes: Awareness of data management issues and demographic information. The questionnaire is translated into Finnish and Swedish. In Finland, the survey for data collection will be conducted by using LimeSurvey online platform during spring 2017. The survey will be distributed by utilising the higher education institutions and research organisations involved in the Tuuli project. It will provide a firm platform to reach academics at all levels, including doctoral students in all disciplines of the universities involved. The data will be analysed quantitatively using IBM SPSS Statistics.

Result

Results of the Finnish survey will be reported in the ECIL 2017 conference.

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Keywords: *open science, open data, data management, data literacy, Finland*

Information Literacy of Croatian Subject Indexers

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Purpose

The purpose of this paper is to present results of the application of the Cognitive Work Analysis (CWA) framework on the study of the ability of subject indexers in Croatian libraries to find and apply the necessary information in order to perform their work.

CWA is a work-centered conceptual model (Rasmussen et al, 1994) whose purpose is to guide the analysis of cognitive work, and its approach depends on the context of the work performed. In this framework, the context is represented by a set of obstacles and limitations that modify users' (actors') information behavior. In other words, this framework examines human information interaction in the context of specific goal-driven activities.

CWA consists of five dimensions, and this paper focuses on dimensions two (*work-domain analysis*) and four (*activity analysis*) as the dimensions that primarily focus on information literacy of actors (Fidel & Pejtersen, 2004).

Design/methodology/approach

We studied the information behavior of subject indexers in Croatian libraries (academic and public) and present here findings relevant for the second and fourth CWA dimensions. The findings were obtained through a simulated subject indexing task as a part of a semi-structured interview. In the simulated indexing task, we used two additional research methods: think-aloud method and the analysis of verbal and video records.

The research was conducted in April and May 2013 on the sample of 10 subject indexers in five Croatian libraries. During the simulated indexing task, subject indexers were asked to index a few documents in the way they usually perform such tasks at work and to verbally describe their thoughts while performing that task.

Results

The analysis of the simulated task data revealed that the biggest problems and obstacles for Croatian subject indexers were related to information searching and retrieval of the final subject access point. The majority of subject indexers in the sample had pronounced difficulties in the search and retrieval phase of the task and consequently ended up with zero retrieved results.

Originality/value

This is the first study of information literacy (IL) and work-related activities of Croatian subject indexers. In addition, this is also the first study that uses the CWA framework to investigate the aforementioned. The scientific contribution of this paper is the critical validation of theoretical and methodological approaches to the research of subject analysis together with the suggestions for improvement of work of subject indexers.

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Keywords: *cognitive work analysis, CWA, information retrieval, subject indexers, work-domain analysis, activity analysis*

Copyright Literacy in the Academic Field: Analysis of the Differences between Faculty, Students and Librarians

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Objectives

Copyright is involved in many of the educational and informational activities that take place in the higher education environment. Teaching and research activities of professors or the activities during the students' learning require the use of works whose copyright belongs to third parties, so they should be aware of what they can and cannot do with such works without breaking the law. But both students and teachers, as in some cases, librarians, are also creators of intellectual works, so they need to know what rights they have over the works they have created.

The digital environment has complicated this relationship between the academic community and copyright law, as much for the new possibilities of use and transmission of the digital works, as for the legislative reforms of the last years (Lipinksi, 2007). Faced with this situation, university libraries have attempted to take on the role of advisers and trainers in this area, and are developing numerous information literacy activities focused on copyright law (Rodriguez et al., 2014), for which they need to have a higher level of knowledge of the subject than professors and students (Frederiksen, 2015). Among the most relevant research developed on this topic, the multinational copyright literacy survey (https://copyrightlib.unibit.bg/index_en.php) led by J. Todorova stands out. It is also worth mentioning the study of Lisa Di Valentino, (2016) centered on Canadian universities. The aim of this work is to identify and study the main differences and similarities in knowledge of the basic matters of copyright literacy among the three sectors of the university community: faculty, students, and librarians.

Methodology

The results of three different questionnaires for each of these sectors in two Spanish universities (Extremadura and Granada) were analyzed. Given the diverse characteristics of the respondents, each questionnaire was different, but shared some common elements focused on the most basic issues, i.e. copyright content, exceptions and limitations, formal requirements needed, duration, and concept of public domain. In addition, taking into account their increasing relevance (Kapitzke et al., 2011), questions centered on copyleft-type licenses were also included.

Outcomes

The results reveal that the main mistakes and misunderstandings are shared by the three sectors, although there are some interesting differences between each of them. Unsurprisingly, students are the worst performers in general terms, but they are not far behind professors and librarians. Although the latter are those that demonstrate a higher level of knowledge, they are far from being able to assume adequately the indispensable services of copyright literacy to professors and students.

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Keywords: *copyright, information literacy, academic librarians, university professors, college students*

Information Literacy and Learning in Higher Education: a Thought Experiment

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There is a strong relationship between information literacy (IL) and learning in higher education (Bruce, 2008). Yet, this relationship can be difficult to delineate theoretically and in day-to-day librarianship. This paper will investigate the relationship between IL and learning in higher education via thought experiment – a method employed primarily in philosophy but also used in other fields like physics. Thought experiments can "help explicate a concept and its area of application more precisely" (Brendel, 2004). For example, by imagining himself chasing a beam of light, Einstein was better able to understand the properties of light, which aided developing the Special Theory of Relativity. By directing our attention to and manipulating certain variables, e.g. when IL abilities are used, our thought experiment will attempt to more accurately describe the relationship between IL and learning in the context of higher education.

The thought experiment is the following: Kiki is a college student who possesses the most sophisticated knowledge, abilities, or perceptions of IL *possible* at a specific time. For whatever IL theory or philosophy one subscribes to, Kiki is the ideal. This can be through the skills of finding and evaluating information or something more complex such as the student passing through all possible IL threshold concepts. However, at the current time, Kiki has not used her sophisticated IL knowledge and abilities to learn disciplinary content.

This hypothetical situation yields important questions concerning the relationship between IL and learning. This paper will examine two fundamental questions:

1. Is it *possible* for Kiki to be so advanced in IL without learning disciplinary content?
2. Is this situation acceptable for an academic librarian if it is possible that Kiki uses her complex understanding of IL sometime in the future?

This paper will argue that even if Kiki's situation is possible (which depends on one's theory of IL), it is not desirable. IL becomes substantially less important in a higher education context if it is divorced from disciplinary learning, even with Kiki's extraordinary abilities. What good comes from such a powerful ability if it is not used to learn and succeed? IL's value lies in its relationship to student learning, regardless when IL is used. Accordingly, academic librarians who care about IL should also engage with theories of learning, like constructivism and variation theory, if their work is to have an impact on the teaching and learning missions of their schools.

IL should play an essential role in student learning in higher education. In explicitly grappling with learning theories, academic librarians will be able to come to greater theoretical understandings of IL, collaborate more effectively with teachers, and better serve the teaching and learning missions of their institutions.

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Keywords: *higher education, thought experiment, learning*

Professional Practice: Using Case Studies in Information Literacy Instruction Towards Career Readiness

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Information literateness is an essential element of career readiness: to be successful information users in the workplace, students must be ready to manage a complex network of information needs, resources, and products. In the one-shot or library tutorial model, how might the librarian work with students to develop these higher-order information literacy skills?

A lesson was designed to support upper-division undergraduate students' ability to analyze research needs, synthesize existing resources into a new information product, and reflect on their research process, within a wine business course. A constructivist approach was taken to support student achievement of these high-level information literacy skills while being grounded in disciplinary practice. Constructivist teaching practices draw on students' existing knowledge and experiences, and build from these to develop new skills. By using case studies, information literacy skills (new knowledge) are connected to students' work experience and their knowledge of the field (existing knowledge), allowing the instructor and students to explore more complex topics than if these concepts were taught in an unfamiliar context or as discrete skill (Grassian & Kaplowitz, 2009). In addition, case studies allow students to model information practices in realistic scenarios, as if they are implementing them in the workplace (Spackman & Camacho, 2009). This kind of disciplinary instruction has been discussed as having real value in achieving literacy, in contrast to isolated or non-disciplinary information literacy instruction (Hicks, 2016).

In this lesson, students were given fifty minutes to work in small groups roleplaying as a consulting team for a scenario outlined in a wine business case study. Guiding questions were provided, asking students to identify points in the study where information was needed; what resources they might use to address those needs; and how that information might be evaluated within the context of the case study. Students then synthesized this information into a new product by providing a recommendation for the business owner.

As part of their course assignments, students created a business plan for their own wine business. Included in the assignment was a worksheet of prompts to encourage reflection on individual information practices while creating the business plan. Outcomes for this lesson were assessed using a qualitative content analysis of thirteen of these student reflections. Reflections demonstrated an ability to identify information needs within a complex business situation, as well as use diverse resources to address these research needs. Reflections also demonstrated that students are not integrating peer-reviewed research into their referenced resources. Students displayed an ability to use existing information to guide the creation of new information in the form of their business plan. Results from this lesson demonstrate the value of exploring the potential of case studies to teach complex information literacy skills while also working to support student career readiness.

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Keywords: *information literacy, career readiness, constructivism, case study, reflection*

Information Literacy in the Age of Fake News

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How do you know it is true? Because I read it in the papers/saw it on the television. Not too long ago, this would have been a good answer to validate one's assertion. Not anymore. Because reading it in the newspapers, watching it on the cable news, or even following it on social media is no longer a bona fide way of obtaining credible information. This is because of the onset of "fake news". Fake news is not a new phenomenon; misinformation has long been a weapon of choice to unsuspecting listeners and readers through time immemorial. But the traditional media long carried the badge of a filter for the truth, because of the special moral responsibility that journalists have (Borden and Tew, 2007). This seems to be no longer the case. The proliferation of mass media by the mass through easy access to social media, the partisanship of several media houses with a self-serving agenda, and government's involvement with "news" dissemination has changed the playing field. In the recently concluded US elections, whose results surprised even the best political veterans, Allcott and Gentzkow (2017) found that over half of the people recalling seeing fake-stories believed those stories. Then there is twitter. Never has a 140-character space had so much impact for so many people as when is accessible to anyone with Internet access, and especially when it is used by no less a person by the president of what is supposed to be the greatest democracy on the planet.

Objective

This paper looks at the concept of "fake news" as it affects citizen's ability to discern what is accurate information, and the likely effects on citizens' ability to participate in their governance. It takes a look at some of the already established systems where this concept has been operationalized for quite some time, and discusses the significance of this concept as it creeps into the so-called democratic societies. We also discuss Kahan's (2017) two models for investigating the impact of fake news on public opinion: the information aggregator model, where the sum total of information sources determines an individual's beliefs, and the motivated processor model, where the search for information and the weight attached to that information is driven by the individual's pre-dispositions. The questions we seek out to answer are two-fold: how will information literacy be defined in the context of "fake news", and what can be done to ameliorate the harmful effects of this phenomenon?

Methodology

To answer the above questions, we conducted a survey of the literature covering the concept of "fake news" paying particular attention to the literature covering the period before and after the US presidential election of 2016. In the survey, we were especially interested to learn how the concept of "fake news" has evolved, and especially its effect on pre-conceived notions of the "truth".

Outcomes

We hope our paper will contribute to our understanding of what it means to be an information-literate individual within the context of increasing social media outlets for "news", especially where there is deliberate effort to deceive or otherwise to appeal to individual pre-disposition for what kind of information sought and accepted. We hope this will also help us examine what this means in terms of citizen ability to participate in the democratic process.

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Keywords: *fake news, information literacy, citizen participation*

Towards a Curriculum in Information-Documentation for All French Secondary Students

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The APDEN is the association of French teacher librarians, founded in 1972, and advocates for the teaching role of *professeur documentaliste,* more specifically the implementation of a curriculum in information-documentation. These last years, two significant dates marked the profession: 2013, with the Reference System attached to the teaching professions which reaffirms that teacher librarians belong to the teaching staff and play a major role in the acquisition of students' information culture; 2017, with the new mission statement which reaffirms the teaching mission of *professeur documentaliste* in the field of information and media culture, which includes Media and Information Literacy. The aim of this communication is to present the role of *professeur documentaliste* in France, in the current context of the new mission statement, for the acquisition of an information and media culture for all secondary students.

For the past 40 years, the APDEN has contributed to the idea of school knowledge in information literacy through the development of educational contents and their teaching methods. The CDI, *Centre de documentation et d'Information*, is more than a place of resources, it's a place of learning. The CDI is designed as an instructional space supporting the teaching of information-documentation knowledge, like science rooms are designed and managed, in their organization and resources, for the teaching of science.

For many years now, *professeurs documentalistes* have been teaching information and media literacy (MIL). They are active players in this implementation, either aloneor in collaboration, within subject classes or within pedagogical devices. However, stumbling blocks remain for teacher librarians: no curriculum, no schedules in the students' timetables students, and no official learning progression. Actually, MIL is enshrined in syllabuses, however MIL as proposed by the French Ministry of Education is not satisfactory enough, as specific contents in the information literacy field are not sufficiently developed. This implementation, based on a transdisciplinary approach, leads us to fear many problems since there will be no referent teacher to ensure equal progressiveness and consistency in this teaching. In comparison, others locations like Belgium and Québec, have adopted this transversal approach.

The APDEN calls for the implementation of a curriculum in information and documentation that defines the contents to be transmitted in a progression of learnings and along with their evaluation. The thought about specific notions, started in 2007, has now a new impetus with the APDEN Info-DocWikinotions, a collaborative platform, with a new completely redesigned version launched in 2013, where academic and teacher librarians are invited to contribute. This project aims to update the corpus of knowledge, gather educational activities, and provide an exhaustive list of scientific and professional references on the subject. The platform is slowly spreading among teacher librarians and is periodically updated with new scientific references and lesson plans. This project can be assessed, among other criteria, by the number of visits for each notion.

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Keywords: *information literacy, curriculum, school librairies, France*

Information Literacy of Lawyers in their Working Environment

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Purpose

The research aims at presenting the way legal practitioners (judges, lawyers, etc.) in the Republic of Croatia access relevant sources of information necessary in their profession and defining the problems emerging from their literature search.

Modern employees have to acquire essential information literacy (IL) competences and skills since they are expected to be productive and innovative. They are expected to be able to transform information to create new knowledge and to develop knowledge within information environment in order to become competitive and successful on the global market.

Accordingly, in the course of their formal education, legal professionals have to learn how to find, use, assess, and cite numerous legal sources as well as to learn how to analyse, approach a legal issue, compare different legal systems accessible in various legal databases and other sources of information, as well as how to assess scientific data in different branches of law.

In this context the following research questions arise: To what extent have legal practitioners developed and acquired the IL skills and competences necessary for their work in the course of their formal education at law schools? What problems do they have while accessing and searching for the information? What do their employers expect from them? What part of the formal education should be adapted to the needs of their work environment and those of future legal practitioners?

Design/Methodology/Approach

The answers to these questions are obtained from a study comprising quantitative and qualitative research methods. The programmes of information literacy training for legal practitioners have been organized by the Judicial Academy of the Republic of Croatia from February to May 2016 and the output data questionnaire results obtained within this programme will be presented. In addition to the quantitative method, the qualitative method shall be applied by means of the focus group interviews held in February 2017 among the practitioners taking part in the Judicial Academy IL training programme in Osijek. The purpose of the focus group interviews was to gather information into their information behaviour, attitudes, and comprehension of IL in the context of its application in their work.

Originality/Value

This research adds on the *Iurisprudentia* project carried out in 2015 and 2016 at law schools in Croatia. The purpose of the project is to improve the quality of higher education by adapting the study programmes to the labour market. The authors of the paper actively promote introduction of IL into study programmes (Golenko, Petr Balog and Siber, 2016) and the results of this research shall serve as guidelines to adapting the IL to the labour market in the field of law.

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Keywords: *information literacy in the field of law, information literacy programmes, legal practitioners, labour market*

School Librarians' Attitude towards Teaching Information Literacy

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Problem statement

School librarians could potentially play an important part in infusing information literacy concepts and skills into secondary school curricula, as well as enhance implementation of information literacy knowledge practices and dispositions into the secondary school education system. There is literally no knowledge about teaching experience of school librarians in Lithuania and Poland, about information literacy course content (if available at all), and no overall evaluation of librarians' attitudes to teaching information literacy (being a librarian as educator). Evidence suggests that emotions experienced by librarians during their educational duties may be included among the most important factors for improving their teaching proficiency (Julien & Genuis, 2009). This suggests a need to evaluate school librarians' attitudes towards teaching, their experience in implementing information literacy in order to know their potential to be ambassadors of information literacy at schools, as well as their ability to prepare secondary school students to be consumers and creators of information who can participate successfully in collaborative spaces (Mackey & Jacobson, 2011).

Objective of the Study

This research aims to outline school librarians' attitudes towards teaching information literacy by analysing teaching experience, the scope of courses taught, and attitudes towards teaching motivation.

Methodology

We gathered data for this study using a computer-assisted web interviewing (CAWI) technique. We administered an online survey using the 1KA.SI web survey tool. Respondents to the survey were librarians from secondary schools in Lithuania and Poland. Respondents for the research were selected from the top 250 best secondary schools in Lithuania and Poland accordingly. We asked respondents to evaluate five bipolar adjectives (asking librarians to indicate their motivation for teaching), to outline experience in teaching information literacy skills, and to evaluate the work meaningfulness for them personally. The average scores (averages and standard deviation (std.) of adjectives were compared in order to find out which were the most positively valued pairs of adjectives and factors. The differences in the means of the independent groups and factors were analysed by applying the One-way ANOVA method. Teaching motivation linkage with job meaningfulness was explored using multiple regression analysis.

Outcomes

In sum, the results of the survey showed that school librarians had more positive emotions about their teaching motivation than negative ones. A comparison between Lithuania and Poland showed that librarians from both countries taught to locate sources, to select the best sources, and to find information within sources mostly, but gave little attention to the evaluation of information seeking and efficiency of actions implemented during the process.

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Keywords*: librarian as educator, school library, teaching attitudes*

Help Wanted: Effectively Articulating and Assessing Information Literacy Skills for Employers and Job Seekers

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In this study, we investigate the extent to which recent graduates of one LIS program are prepared for careers that call on employees to demonstrate IL proficiency. We answer this question through a triangulated research approach involving the analysis of a sample of job vacancy announcements.

Objectives

Our objectives in this paper are to:

1. understand how the need for IL proficiency is articulated and prioritized in job vacancy announcements;
2. consider the potential impact of the 2016 Framework for Information Literacy for Higher Education in the hiring process.

Methodology

Our research questions are:

- (RQ1): How pervasive are the needs for IL in the information profession(s)?
- (RQ2): How do job candidates show and prove IL skills and abilities?
- (RQ3): What advice might employers and recent graduates give LIS faculty and career services staff to ensure they are prepared to meet IL needs in the workplace?

We will conduct a content analysis of the position openings listed on the University of Texas at Austin's iCareers Platform, an internal database available to iSchool students and alumni that posts more than 2,000 full time job vacancy announcements each year. We will review all positions listed for six months and assess the degree to which openings describe content reflected in the six frames for the ACRL Framework document. We will survey employers to understand the perceived value and importance of information literacy skills and identify any perceived IL gaps in today's candidate pool as a whole. Through surveying a sampling of recent LIS graduates we will evaluate the perceived importance of IL skills and impact on the job search process. By reviewing survey data related to sample interview questions commonly used to ascertain IL, as well as the extent to which these types of questions are specifically used, we will further study how IL skills are assessed, if at all.

Outcomes

We will close our paper with recommendations from employers and new IL specialists on how to effectively articulate and assess IL skills to successfully match employers with the best candidates.

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Keywords: *content analysis, information literacy instruction, information professionals, job hunting, job qualifications*

The Role of Sense of Coherence in Knowledge Sharing

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Introduction and objective

The point of departure for our study lies in the concept of *information mastering*, as coined by Stefan Ek (2005). Building on the construct of sense of coherence, information mastering can be conceptualized as a meta-information literacy (Ek, 2005). Sense of coherence (SOC) describes the degree to which life seems manageable, meaningful and make sense. A strong sense of SOC is linked to, among others, being able to communicate with others and feeling heard (Antonovsky, 1993; Ek, 2005). Leaning on this notion we argue that one expression of information mastering is the willingness to share information. Knowledge sharing is a key competence in a work context (Ahmad, 2017). The connection between SOC and knowledge sharing has, however, to the authors' knowledge, not been investigated in previous studies. Consequently, our objective is to explore whether a person's SOC is related to self-perceived knowledge sharing in a work context, and if so, how.

Method

A survey was conducted in a multinational organization. We received 274 useable responses. *Knowledge sharing* was measured using a 5-item scale adapted from Yang and Chen (2007). This instrument measures self-reported knowledge sharing, that is how active in knowledge sharing activities a person experience him/herself to be. *Sense of Coherence* was measured by a standardized scale developed by Antonovsky (1993). We also included a scale of *Dedication to diversified learning*, which we developed for the study. Partial least square structural equation modeling was used to analyze the data, to explore both direct and indirect influence of SOC on knowledge sharing (Castro & Roldan, 2013).

Results

The results show that sense of coherence significantly influences the respondents' self-perceived knowledge sharing activities ($\beta = 0.26$, $p < 0.01$). However, when dedication to diversified learning is included in the model, the relationship between sense of coherence and knowledge sharing behavior becomes weaker ($\beta = 0.16$), although remaining significant ($p < 0.01$). It means that the relationship between sense of coherence and knowledge sharing is partially mediated by the dedication to diversified learning.

Contribution

Our results show that a personal characteristic, such as sense of coherence, influence willingness to share information in a work context. This relation is, however, particularly strong if combined with a dedication to work and openness to diversified learning. This dedication, in turn, may be influenced by the match between the individual and the work tasks and the organizational environment. This suggest that a person's information mastering partly arises from personal characteristics, but the degree in which it will be expressed in actuality, for instance in a work context, depends on motivation and contextual factors.

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Keywords: *sense of coherence, information mastering, information literacy, knowledge sharing*

Government Information Regulatory Regimes: a Challenge for Information Literacy in Organisations

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In an age of Open Government and the citizens' right to know, the public record is not automatically made public. Access to government information is controlled by a variety of legislative and regulatory regimes which, in the eyes of public sector employees, let alone members of the public, can be overwhelming and at times seem arcane. In the Australian Government, which is a federation with eight separate jurisdictions, there are a number of different information collection and access regimes. These include the *Commonwealth Protective Security Policy Framework* (PSPF), the *Archives Act 1983*, *Freedom of information Act 1982*, *Privacy Act 1988* and the *Public Service Act 1999*, and its associated guidelines on machinery of government change. Similar regimes exist within the Australian States and territories. This complexity, combined with the information culture of government agencies (Oliver, 2008) requires public sector employees, either those seeking government information or those making decisions to disclose information, to have high levels of literacy (Lloyd, 2003).

Objectives

The National Archives of Australia has established a set of aspirational capabilities, including senior government employees who should have a good understanding of the information management regimes within their agency (2015). This study seeks to examine levels of compliance in three government organisations by exploring the levels of information literacy of this complex regime among several professional groups, and its implications between and across disciplines for an organisation's workplace in specific information cultures (Oman, 2001).

Methodology

This comparative case study uses data from three Australian Government case study agencies. The primary method of data collection was semi-structured interviews, supported by desk research. An inductive approach to data analysis was utilised and the themes presented are those arising from preliminary stages of analysis.

Outcomes

Findings show that the information management professionals whose focus is on the application and compliance of these regimes have a high level of information literacy in this area. However, when examining other professional groupings in government agencies it becomes clear that, with perhaps the exception of the lawyers, many do not understand the different information regimes. While awareness of the more common ones such as privacy and freedom of information was high, understanding of their application in the complex policy context is limited. The information culture within the organisations has also affected how some agencies have chosen to interpret and apply policy regimes considered counterintuitive to information sharing.

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Keywords: *civic literacy, digital literacy, government information, information culture, freedom of information*

Recognizing the Influence of Disciplinarity on Student Inquiry

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Upper-level undergraduate students should be made aware of the role that disciplinarity plays in shaping the creation and dissemination of scholarship, thus empowering them to navigate scholarly literature with a deeper understanding of how disciplinarity shapes their inquiry. However, when asking students to engage with scholarly literature, teachers often direct them to specific journals. The teacher likely has particular reasons for students to engage with the selected journals—yet, often the reasoning behind the selection process is not made explicit. Information literacy efforts in higher education do not typically aim to make students aware of the nuances of disciplinary cultures and how disciplines package information.

This conceptual paper explores the critical importance of disciplinary cultural influences on the evaluation of information. Descriptions of information literacy have emphasized how it may be situated within disciplinary contexts (Lupton & Bruce, 2010), including recognizing authority (ACRL, 2015). However, these descriptions may fall short of explaining the nuanced forces shaping such authority, which include disciplinary identity, and the privileging of various approaches. Knowledge is undifferentiated until it is viewed through a discipline. Hérubel's (2012) definitional model defines the characteristics of disciplinary cultures, including:

- disciplinarity as highly defined with specific methodologies and specialized nomenclature,
- interdisciplinary as two or more disciplines permanently melded to examine a specific set of topics, and
- multidisciplinary as two or more disciplines providing their unique perspectives to examine a topic (Hérubel, 2012).

The paper describes a hypothetical upper-level undergraduate historiography and historical methods course that introduces students to historical scholarship and has them engage in approaches to effective historical research. Coherence of historical knowledge is realized through contextualized disciplinary practices and research protocols (Hérubel, 2010). Recognizing disciplinary influences upon historical research journal publications allows students to reflect on different approaches, methodologies, and theoretical perspectives that may influence their research process. Student recognition of the disciplinary configurations empowers them to engage more deeply with the literature on their topic, facilitating successful historical research.

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Keywords: *disciplinary literacy, higher education, interdisciplinary, multidisciplinary, undergraduates*

From Transfer to Transition: Scaffolding Instruction Librarian Learning through an Open Access Publishing Assignment

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New instruction librarians face numerous transitions, both within their Library and Information Science (LIS) education as well as throughout their careers. Yet, although there is a growing body of workplace information literacy literature that explores transitions within blue- and white-collar communities (e.g. Lloyd, 2010), as well as from college to the workplace (e.g. Head, 2012; Hicks, 2014), there has been relatively little investigation of transitional experiences within LIS and especially within instruction librarian education. This oversight is problematic because it risks leaving students unprepared to teach, as several North American research studies have demonstrated (e.g. Davies-Hoffman, Alvarez, Costello & Emerson, 2013; Houtman, 2010). It also means that most research into instruction librarian education focuses upon practical skills and competencies rather than upon an exploration of student engagement with new professional identities and the collective values that constitute professional practice (c.f. Lindberg, 2015). Taking a sociocultural approach and recognising the importance of designing learning opportunities that facilitate workplace interactions, this paper reports on student and librarian experiences of an LIS assignment that was reimagined as a chapter in an Open Access book that was both designed for and peer-reviewed by librarians in the field. Serving to scaffold student professional participation, this assignment aimed to create a collaborative project of mutual interest (Konkola, Tuomi-Grohn, Lambert & Ludvigsen, 2007) in which students were actively contributing to the development of instruction librarian knowledge, rather than passively assimilating standard practice. Structured around the typical librarian practice of sharing knowledge, the assignment's emphasis on the negotiation of situated practice further refocuses attention on transition rather than on the more problematic concept of learning transfer. Studied through a descriptive survey method, this paper explores the experiences of the 19 students and the 19 reviewers who participated in this assignment as well as the contribution of this project to the development of student and librarian knowing. Drawing upon answers from the two open-ended questionnaires, data were coded into broad themes through an emergent coding process. Findings from this study demonstrate a problematic lack of communication between student and librarian instruction librarians and establish the use of the assignment for both student learning as well as for librarian development in the field. In exploring how librarians and students can learn from each other, this paper will situate instruction librarian education within the field of workplace information literacy and engage issues connected to the role of librarians in LIS education. It will also explore the impact of student publishing and Open Access pedagogical models at the graduate level.

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Keywords: *open access publishing, workplace information literacy, LIS education, transition*

Information Practices and Library Perceptions of International Graduate Students in the United States

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Academic libraries have a long history of deploying user surveys to investigate student and faculty information practices and library services satisfaction. Such data, along with professional standards and best practices, inform the design and delivery of library services and are used for budgetary and policy advocacy. International students comprise an increasing number of the graduate students in the United States; however, investigations into their information practices are only beginning to emerge and such studies are rarely designed to enable comparative analysis of international and domestic graduate students. This study investigates how international students differ from domestic students in order to improve understanding of student information practices and needs generally as well as provide guidance for libraries and universities developing information literacy and other service programs.

An analysis of data gathered through the Ithaka S+R Graduate/Professional Student Survey at the University of Illinois at Urbana-Champaign forms the basis of this investigation. 1,388 graduate students completed the survey (13 percent response rate) and 38.2 percent were international graduate students.

The Ithaka S+R Survey documents the relationships between international/domestic status and academic goals, information practices, attitudes, and perceptions of library services. Though the survey found few differences between international and domestic graduate students with respect to their higher education goals, coursework and academic experiences, research practices, or perceptions of the role of the library, there are some areas in which the differences between international and domestic students are both statistically significant and arguably meaningful.

- International students place substantially more importance on collaborating on original research with one or more faculty advisors, instructors, or professors, undergraduate students and graduate students than domestic students.
- International students also place greater importance on being employed or receiving course credit as a research assistant than domestic students.
- Finally, among those respondents who indicated that they were at the research stage of their degree program, with respect to choosing the topic or the dissertation, thesis, or capstone project, international students report placing higher levels of importance on advice from other graduate students or peers, the job market, accessibility or reproducibility of needed data, images, or primary source materials, accessibility of needed academic books or journal articles, and future tenure decisions, merit increases, or promotions than domestic students.

These findings lend insight into considerations for developing library services for international students and underscore the importance of analyzing specific subpopulations. Though it is tempting to focus on areas where there are differences, the areas of similarity are equally important for developing information literacy services as such programs must not assume differences where none exist. These findings also have implications for lifelong and workplace information literacy programs. Graduate students are likely to go on to careers in which information access and use are prominent factors in professional success. Understanding their information work practices during schooling will inform understanding of their eventual workplace practices.

Keywords: *research practices, information literacy, graduate students, international students*

Implementing Library Strategies and Values as a Part of Workplace Information Literacy

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Purpose

The aim of this paper is to investigate how the library staff's understanding of the organizational strategy and values affect the adoption of innovations and new services. The paper is based on research and data collected in the adoption of e-books in Finnish public libraries.

Methodology

The study is framed through Roger's Diffusion of Innovation -theory. The research methodology is qualitative and the target group includes six libraries. The data was collected through interviews. Research material includes the strategies and values of the libraries. The analysis method used is inductive and hermeneutic textual analysis.

Outcomes

Operational culture has an important role in the workplace adoption of innovations. According to Rogers (2003), a key factor in adoption is the compatibility of lifestyles, social system and standards. An operational culture rises within the framework of the intellectual, material and social practices (Knuuttila, 1994).

The various positions in the organization contain different types of roles for the introduction of new policies and services. The Executive Board decides on the introduction of a new service, its contents and how to deploy it for the staff. The role of staff is embracing a new service into the organization's service offering (Rogers, 2003).

The Executive Board's decisions on e-book adoption to the library's collections and services, as well as staff's attitudes towards e-books was analyzed in this study. Attitudes of the staff reflect the organization's intellectual and social practices (Sinha et al, 2016), and affect the adoption of new services and technologies (Aharony, 2013). The study found a gap between the reasoning of Executive Board decisions and the attitudes of the staff.

Executive boards' decision on the introduction of e-book services is usually based on the implementation of strategies. The decision is based on both national library strategies as well as local strategies. However, this point-of-view does not appear in the attitudes of the staff analyzed.

The library staff understands and accepts e-books as a part of the Library services and collections, but connection with library's values and strategies seems not to be internalized, and thus their importance in the implementation of strategies is not understood. From this point-of-view, the adoption of the e-book service remains superficial and no strategic diffusion happens from the management level to the staff actions.

Information filtering and evaluation through the organization's strategy and values should be seen as part of information literacy in the workplace. The valid implementation of the strategy needs extra effort on the part of management.

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Keywords: *e-book, attitudes, library staff, executive board, public libraries, Finland*

A Tale of Two Journals: Information Literacy Discourse as Seen Through a Decade of *Communications in Information Literacy* and the *Journal of Information Literacy*

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The concept of information literacy evolved as a central theme for academic public services librarians in the 1990s. Professional discourse around this theme resulted in the development of seminal, guiding documents in the United Kingdom and the United States. The *Information Skills in Higher Education: A SCONUL Position Paper* was published in 1999 by the UK's SCONUL Working Group on Information Literacy, and the *Information Literacy Competency Standards for Higher Education* was adopted in 2001 by the US-based Association of College and Research Libraries. The energies generated by these documents, and the emergent discourse around information literacy created a fertile landscape for the development of two professional journals, both launched in 2007: *Journal of Information Literacy* (JIL) in the UK, and *Communications in Information Literacy* (CIL) in the US.

The presenters are the editors of JIL and CIL; they have analyzed the last decade of published papers in these journals to identify the major issues, topics, and trends that have engaged the information literacy communities in Europe and the United States. This presentation will showcase their findings and their projections concerning the future of information literacy literature. Their longitudinal analysis charts key evolutions in applied information literacy thinking, from standards-based competency measurement to learner-centered contextual methods; from a normative focus on search behavior to relational and phenomenographic approaches; towards a vision of knowledge as dynamically and socially constructed, and critical information literacy as an instrument of social justice. This journey reveals fascinating snapshots of how we conceive of information literacy, and of ourselves as IL librarians. This presentation will conclude with guidance for potential authors in terms of undertaking information literacy-related research in the decade to come.

Keywords: *discourse, longitudinal study, information literacy research, history, future*

Assessing a Library's Support for Overlooked Components of a University's Learning Culture

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Objectives

The inquiry focuses on assessing the size of a university library's support for courses with engaged-learning activities and student populations over three years. In doing this, the study models an effective way to obtain data using campus information systems. The questions the inquiry aims to answer are:

1. How can libraries identify courses where library resources and services support engaged learning courses?
2. How can libraries target their efforts for the maximum impact on student learning?

More focused questions that serve as data-gathering goals to answer the larger questions are:

1. How many courses with engaged-learning activities (service learning, undergraduate research, internships, writing-intensive courses, etc.) require the use of library resources and services? How many students are enrolled in these courses?
2. How many students in each class year passed a course each semester with a library assignment?

Methodology

Texas requires all faculty teaching in Texas institutions of higher education to submit syllabi of all courses they teach for inclusion in a publicly searchable online resource. Texas Tech University uses DigitalMeasures to meet this legal requirement (DigitalMeasures, 2016). For focused question 1, the author searched in all syllabi of courses taught between the spring of 2011 and the summer of 2013 for 'engaged learning' and related keywords. For focused question 2, the author searched in DigitalMeasures using 'library assignment' and related keywords. He examined each syllabus to determine whether it met the questions' requirements. The university uses Ellucian's Banner Student to store academic records (Ellucian, 2016), including information on courses taught, course enrollment, and grades. The author obtained enrollment and passing grade data of all those courses found in DigitalMeasures that met the requirements of focused question 2.

Outcomes (focused questions)

The library contributed to only 99 of 4,500 courses with engaged-learning activities.

The freshman classes had the highest figures for passing courses with a library assignment. The data indicates that the library has done reasonably well supporting freshman courses.

Conclusions/Implications (inquiry's questions)

Campus information systems enable comprehensive searching for information that produces a detailed understanding of the size of a library's contributions. Even basic information such as numbers of courses and students enrolled in them is useful as indicators of size and scope of a library's contributions. Measurement of library involvement is important in itself, because it demonstrates the level or size of library support for the institution's mission and goals.

More importantly, this information can lead to additional research that provides a greater understanding of a library's contribution to student-learning outcomes over periods of several years. Without the comprehensiveness made possible by campus information systems, a library at a large university may be able to provide evidence for only a limited selection of courses.

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Keywords: *higher education, information literacy, library services, assessment*

Social Living Labs for Informed Learning: An Innovative Approach to Information Literacy for the Changing Workplace

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With digital technologies changing the nature of work, and workplaces becoming increasingly mobile, there is a need for innovative approaches to information literacy development that extend across the community. Continuous learning, beyond formal education, is essential to individual productivity and social wellbeing. In particular, to flourish in a contemporary transient workforce, people need a range of digital capabilities for working across complex information environments. These capabilities include critical, creative and collaborative use of information that can be flexibly applied to differing contexts.

This paper proposes a social living labs model for workplace and community information literacy development that builds upon findings of a major Australian research study, and the principles of informed learning (Bruce & Hughes, 2010). As this paper explains, *social living labs* (Ballon & Schuurman, 2015; Schumacher, 2015) are innovative sites of learning and creativity where community members of varied backgrounds work on interest-driven projects. *Informed learning* (Bruce & Hughes, 2010; Bruce, Hughes & Somerville, 2013) translates information and digital literacy goals into a contemporary approach that enables 'using information to learn' in higher education, workplaces and the community. In this conceptual context, *information* is understood to be "anything that informs" in a particular context, including personal and professional experience, facts, research findings, statistical models, architectural designs and sensory stimuli.

The model proposed in this paper is based on research that focused on the digital participation and learning of residents in two Queensland regional centres, Townsville and Toowoomba. Reflecting the important role of public libraries in information literacy development, partners in this QUT-led project included Queensland State Library, Toowoomba Regional Council Library Services and Townsville CityLibraries. Using a variety of qualitative methods, including interviews and focus groups, researchers worked with about 20 different community groups (approx 150 participants in total) to investigate the potential of social living labs to foster community digital participation. The findings, which arise from thematic data analysis, provide real life insights about participants' experience of social living lab initiatives and their resultant digital learning. The research findings and proposed model represent an innovative contribution to information literacy theory and practice. They are of potential interest to workplace and community educators, librarians and researchers.

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Keywords: *workplace information literacy, community information literacy, informed learning, digital participation, social living labs, Australia, Townsville, Toowoomba*

Concepts Related to Health Literacy in Online Information Environments: a Systematic Review

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Introduction

Literacy concepts related to health are diverse and often cross disciplines and research areas. For example, in medicine the most used concept is health literacy that is often defined as "the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions" (Ratzan and Parker, 2000). In information studies the concept of health information literacy is used. It was introduced by the Medical Library Association (Shipman, Kurtz-Rossi & Funk, 2009) and combines information literacy with health literacy. This study aims at analysing the concepts and definitions related to health literacy. Contemporary health information is increasingly digital. Therefore, the focus is on studies conducted in online information environments.

Method

This systematic review follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses, PRISMA (Moher, Liberati, Tetzlaff & Altman, 2009). A systematic literature search was conducted by using LISA, ASSIA, ERIC, Medline, LISTA, and CINAHL databases in 2016. The search terms covered domains 'health', 'online' and 'literacy', including several related terms. The search was limited to original peer-reviewed research articles written in English between 2011 and 2016, and it resulted in 1289 references. Researcher triangulation was utilised. The first author screened the abstracts according to predetermined criteria. Articles were excluded if they did not focus on a concept related to health literacy, if the informants were not lay people, or if the study was not related to an online context. The second author screened a 10 percent random sample. After screening the full-text articles (n=180), 71 articles were included in the review.

Results

Research in which concepts related to health literacy in online information environments are used has been conducted in several disciplines, mainly in medicine and public health. There are eight concepts identified. The most often used concepts are health literacy and eHealth literacy. The definitions of health literacy vary, as nine different definitions are identified for it. Two definitions of eHealth literacy are identified and usually the other one is used dominantly. The concept of health information literacy was presented in one article. Future studies should critically examine the definitions of literacy concepts in the context of health. This enables a deeper understanding of different perspectives and science philosophical background assumptions of literacy studies related to health in online information environments.

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Keywords: *health literacy, health information literacy, online environments, systematic review*

Alternatives to Being Information Literate

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There are several competing theories of what information literacy is ranging from skills and competences based approaches to conceptualising information literacy as a socially enacted practice (e.g. Stordy, 2015; Lloyd, 2010; Tuominen et al., 2005; Bawden, 2001). In contrast, the earlier research has put considerably less attention on what are its alternatives.

On the basis of empirical interview and observation based investigations of workplace information literacy in the context of archaeological work conducted in 2013-2015 in a Nordic country, the present study presents a set of alternatives to being information literate in the context of work, from avoidance of work to various strategies of evading the need to master work-related information and information work practices. In contrast to how earlier studies have tended to focus on different levels from low to high (e.g. Wallis, 2003), and strategies of information literacy, (rather rarely) on 'information illiteracy' as a negative information literacy or lack of it (exceptions e.g., Green, 2010; Lin, 2010; Perelman, 2008; Mensching and Mensching, 1989), or on different practices within which information literacies are enacted (Lloyd, 2012), the present study posits that information illiteracy can have different nuances that partly come close to alternative forms and types of information literacies, and partly to strategies of coping without self-mastering necessary information and information work practices.

The findings, acquired from a constant comparative method based analysis of interview transcripts, visual and textual notes, suggest that the lack of information literacy in general and specific types of information literacies in particular, can be experienced as a problem but they can also represent a conscious choice for individuals and groups to delimit and organise their information worlds to better manage their everyday life.

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Keywords: *information illiteracy*, *strategies*, *coping*

Data Literacy Perceptions and Research Data Management Practices by Researchers in Japan

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Background

Open research data is one of the important issues in the science and technology policy in Japan. In *the Fifth Science and Technology Basic Plan (2016–2020)*, 'open science'—promoting access to publicly funded research products such as research data and papers—is considered a cross-disciplinary issue. The Cabinet Office, Government of Japan (2016) states "Japan is partnering with other stakeholders, including funding agencies, universities and other research institutes, as well as individual researchers, to build systems for promoting open science". The Japan Science and Technology Agency (JST) published *Data Management Policy for Strategic Basic Research Programs*, which requires in principle that "research directors will create data management plans after approval, and store, manage and disclose data according to the approved plan" (JST, 2016) in some research areas for the first time in Japan. Despite these policies, open research data is not included in ordinary research lifecycle in many fields. It is necessary to develop an appropriate data literacy training and support system for research data management.

Objectives

The purpose of this survey is to reveal the current state of data literacy perceptions and data management practices by researchers in Japan to build better systems for promoting open science, including data literacy guidance, an open data policy, Data Management Plan (DMP), institutional data repositories, and an integrated search system.

Methodology & Results

The authors participated in a multinational survey and translated the questionnaire into Japanese. Researchers in all disciplines in Japan were invited to the survey by e-mail. Data were collected via LimeSurvey, a web survey system, from 24 February to 24 March 2017. The University of Tsukuba Library, the Department of Research Promotion, and Doshisha University Organization for Research Initiatives and Development cooperated in the data collection.

A total of 586 researchers participated in this survey obtained from 277 academics and 309 doctoral students, of which 73.5 percent of researchers had prior experience in making data available to others. Rates by discipline were as follows: Engineering and Technology (94.4 percent), Natural Sciences (89.8 percent), Medical and Health Sciences (85.5 percent), Social Sciences (64.5 percent), and Humanities (51.7 percent), $\chi^2 = 55.817$, $p = 0.000$. However, only 6.7 percent claimed that their data is openly available to everyone and 74.6 percent had some concerns regarding sharing data with others, while 73.9 percent would like to receive some formal training regarding data literacy and research data management.

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Keywords: *data literacy, research data management, open science, research data sharing, open research data, data management plan, multinational survey*

On The Move: Transitioning from Higher Education into Insurance Work

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There are issues around transitioning information literacies from education to the workplace (Goldstein, 2014; Wiley, 2014). Employers have identified problems around graduate employees being unable to adapt their information capabilities from the study context to the work environment (eg Cheuk, 2008; Sokoloff, 2012). This is partly caused by different practices, such as sole study in education vs. group working practices in employment and learning outcomes that do not always relate to employability attributes.

This project explores workplace information literacy and transition from higher education to work. It takes a collaborative approach, drawing library and information science (LIS) faculty together with careers services staff. Current work by the principal investigator explores vocabularies around information literacy in education and careers services (Inskip, 2015). A clearer understanding of differing language use may enable more effective delivery of information literacy within higher education and contribute towards employability. Understanding different contexts will allow the development of interventions in higher education and workplace settings. Communicating transferable information capabilities in the language of the employer may increase the employability of job applicants.

The research presented here took a phenomenographic approach. Rich and detailed qualitative data were gathered from an employer, employees, and current UCL student job candidates in the financial services sector through interviews and focus groups. The language around information use in the targeted profession, insurance, was analysed in order to investigate the employer, employee, and candidate conceptions of information literacy in their work context. A comparison was then made between employer, employee, and candidate conceptions, using vocabularies and thematic patterns of description to determine the extent of disconnect between these stakeholders views.

This paper highlights the divergence in language use by the participants and explains how the data we gathered was mapped to an existing framework devised from research into the nursing profession (Forster, 2015). The framework was adjusted to reflect the different work context in insuranceand a revised version is presented here to demonstrate the relationships between the conceptions of information use and information literacy in these two very different professions.

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Keywords: *workplace, phenomenography, students, insurance*

Complex and Multivariable: Methodology of Exploring Digital Literacy and Training Needs within the Polish SME Sector

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Theoretical frameworks

A study of information literacy (IL) types, levels, and needs among the Polish small and medium enterprises (SME) was realized in the years 2015-2016, with the Catalogue of Digital Competencies of SMEs (Buchner et al., 2016) as its final product, a diagnosis and education tool, supporting the 'Internet Revolution' education project of Google Poland. The study is based on Jan van Dijk's concepts of a network society, the relativity theory (Filiciak et al., 2013), and the Framework Catalogue of Digital Competencies (Jasiewicz et al., 2015). It also refers to the studies concerning models of Information and Communication Technologies adoption and development of information literacy in SMEs (Morgan-Thomas, 2016), including trends and aspects of e-business' development crucial ICT competencies (Ashurst, Cragg & Herring, 2012).

Research aims

The aim of the project was to develop the Catalogue of Digital Competencies of Polish SMEs as a diagnosis and education tool. Due to multidimensional diversification of the research group, design and implementation of methodology turn out to be a task more complex and challenging than the catalogue itself. The main directive was to reflect the complexity of the Polish SME sector and its influence on both information literacy level and education needs.

Methodology

The IL diagnosis phase of the project was realized with different qualitative methods, including desk research, focused group interviews with experts, individual in-depth interviews with entrepreneurs, along with a component of observation, and semantic analysis. Interviews were conducted with the owners and employees of 30 Polish SMEs from various sectors and business branches. The Catalogue of Digital Competences of SMEs was developed with the use of Delphi method, and based on the outcomes of the analysis phase.

Outcomes

The methods selected, used and verified during the project, as well as the diagnostic tools developed alongside, enabled identification of key areas of SMEs functioning, and benefits to be achieved as the effect of digitisation of processes, products and/or services. The SMEs sector's information literacy was analysed and described in many aspects, including: size and trade types, location, motivations, types, levels, and shadows of ICT implementation and information literacy advancement. The project revealed and confirmed the crucial role of methodology and a component of relativity in diagnosing information and digital needs and competencies, in workplace as well.

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Keywords: *digital literacy, information literacy, methodology design, small and medium enterprises*

How Does Neoliberalism Shape Information Literacy and How Might the Current Crisis in the Neoliberal System Reshape Information Literacy?

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This paper argues that information literacy is an integral part of political economy and is shaped by the objective conditions of a given system of political economy, neoliberalism being the major form of political economy in many parts of the world today. Whilst information literacy has developed organically through the activities of a variety of actors (e.g. educationalists, media specialists, health professionals, librarians, and researchers) it is also a key element of both economic activity and democratic processes. Neoliberalism is perceived as a system in crisis evidenced by: stagnation in growth and wages; increased indebtedness; and growing inequalities. These economic features are paralleled by problems in the democratic system including: voter volatility; rise of 'populist' parties and movements around the world; and government instability (Streek, 2014; Mason, 2015). Major events in 2016 such as the vote by the United Kingdom to leave the European Union and the election of Donald Trump as President of the USA serve to highlight the sense of national and international crisis in both the economic and political spheres. Both events have also highlighted the importance of information in democratic processes and the dangers of misinformation about economic, social and political questions.

The paper will analyse these issues using the idea of Social Epistemology (Anderson and Johnston, 2016) to illuminate how information literacy might be reconceived and related to the needs of adult citizens in their roles as voters, members of the workforce and retirees. The potential role of UNESCO's development of Media and Information Literacy (MIL) will be considered and critiqued.

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Keywords: *neoliberalism; political economy; social epistemology*

International Students' Expectations of Information Literacy Instruction

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This paper will present findings of a case study that investigates international university students' expectations of information literacy across two countries. A systematic review on international students found that there is a lack of original research about international students and that most literature focuses on 'what we did' information literacy scenarios rather than research. (Click, Wiley, & Houlihan, 2016) Current research into international students focuses on barriers such as language (Liu, 1993), how to communicate with students (Baron & Strout-Dapaz, 2001) and the information seeking behaviour of the students (Liao, Finn, & Lu, 2007). There is a lack of research that focuses on the international students' expectations.

A survey conducted in two countries, Australia, and the UAE will focus on international university students' experiences of information literacy instruction including:

- what they think information literacy is
- if their expectations are that it will help them both in their studies and their future career
- their expectations on how much assistance they should receive from librarians
- what content they expect to find in instructional session or program
- any previous experience of information literacy.

This study will bring together the results in order to determine whether or not expectations differ among international students studying in different countries, and also if expectations differ based on cultural background. The survey will be conducted with undergraduate students at two universities, across a variety of majors, therefore the survey will overall gain results from a diverse range of international students.

The systematic review of international students (Click et al., 2016) points out that there has been a small number of articles (6) that are authored through international collaborations; therefore there is a need for studies like this, that explore and compare results from a number of countries. The results from this case study will provide insights that can be used by librarians working with international students, to plan and develop their information literacy instructional classes and programs. Armed with an awareness of what international students' expectations of information literacy programs are, librarians can develop more meaningful instruction that meets the needs of international students.

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Keywords: *international students, information literacy, programs, survey, case study*

Integrating Citizen Science Elements into Information Safety Lessons

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The paper aims to present a lesson plan prototype developed for information safety lessons held in a public library. The innovation of the lesson consists of the integration of certain elements of citizen science. Based on the theory that participation in scientific research can positively affect the attitude toward the examined object (Prise & Lee, 2013), we suggest to use these elements in order to increase the efficiency of the lesson. The prototype is the first step of the on-going project of experimental implementation of citizen science into information safety lessons. Citizen science is defined as the "public involvement in research" (Bonney, et al., 2009). Its educational potential has been proved (Kalmárová, 2016), however, its practical use in education is still infrequent. As various authors (Prise & Lee, 2013, and Toomey & Domroese, 2015) point out, participation in citizen science projects is very likely to produce positive attitudinal and behavioral changes. Although cited authors refer mainly to research in life sciences, their statements form a basis for our theory about the efficiency of the use of citizen science in other fields of study. Information safety isan extremely important topic. Increasing citizens' computer literacy implies the need to focus ib learning how to behave safely in digital environments. According to the Internet Crime Complaint Center (2015), the bureau registered more than 21,000 cases of identity theft, 19,000 cases of personal data breach, and 16,500 cases of phishing in 2015 alone. These numbers are highly alarming and give us a reason to think about the role of libraries in teaching information safety. By using the citizen science elements inteaching, the participants are expected not only improve their knowledge about information safety issues but also their methodological literacy competences. Steinerová (2013) defines methodological literacy as "knowledge of [the] problem statement, project management, analysis, synthesis, interpretation, [...] and methods of research". At the basic level, these competences can be obtained by participating in the research that is incorporated into the lessons. The target group of the lessons are adult library users who actively use internet services. The content of the lesson consists mainly of processing the results of a survey dedicated to the internet-related behaviour of adult library users. The participants help to process the research data under supervision. Interpreting the results offers them feedback on their own behaviour, comparison with the fellow users, and possibility of transposing newly learned behaviour patterns. In this way, the participants improve their methodological literacy and the information safety competences in the same time. The expectations lie primarily in testing the efficiency of citizen science elements and proving their usefulness. The main task of the prototype is to identify the limits of using these elements in lessons organized bya public library and to find effective ways of their use.

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Keywords: *citizen science, methodological literacy, information safety, public libraries, informal learning*

Lifelong Research – Practical and Vital Aspects of a Visionary Concept

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We introduced a collaborative online workflow platform of scholars, teachers and students, called Palaestria in ECIL 2013 (Z.Karvalics, 2013). This time we:

- provide a rough journey to meet the most impressive best practices from the education and scientific dissemination scene, which make the idea of lifelong research tangible and palpable;
- share the experiences of our pioneer secondary school space archeology project (Csongrad, Hungary, 2013);
- review a collaborative geo-information project in Ugra region (Ugra Research Institute, Hanti-Mansijjsk, Russia, 2016/2017) and;
- present the idea of Labrywhere, as a scientific BYOD (Bring Your Own Device) project with a climatology pilot.

The main objective is to support the wakening of a new narrative, making the concept of lifelong research more visible, demonstrative and persuasive. Our methodology (providing case studies from our practice and mixing them with case studies from the literature) aims to come closer to the statement, that it is time to change our focus, transcending the existing paradigm about new/rising generations ('teaching and disseminating Science more and more effectively in schools').

The outcome is a highlighted axiom, that we have to find a way to make scientific literacy organic, practical, true and universal for every future Citizen, without exception. We have to provide the possibility of learning and doing Science in schools, between ages 12 and 18, to be able to take part in real scientific problem-solving projects. From this point of view, we can start to see every student as a small, but important part of mankind's knowledge asset to cope with future civilization's problems. If participation in scientific value production becomes everyday practice, a research career and an academic job will not be the only way to belong persistently to the scientific community. Having other professions will not be an obstacle or handicap in taking part voluntarily in research programs – reviving lifelong research, the natural counterpart of lifelong learning. We do not come closer to the future forms of Citizen Science with focusing on the growing attractiveness of new research programs or more motivating gamification solutions of existing crowdsourced projects. The real challenge is the foundation of every students' participative ability through scientific literacy development in schools, fabricating junior citizen scientists institutionally and purposively.

Finally, we get to another outcome, to specify and assign the main characteristics of possible Junior Citizen Science projects. Checking these features supports preparing ourselves for future improvements as forms of concerted social innovation.

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Keywords: *scientific literacy, public education, lifelong research*

Examining the Applicability of the Everyday Health Information Literacy Screening Tool in the Context of Energy

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Background and Aim of the Study

Energy literacy has been studied among various disciplines. However, research on energy information literacy (EIL) is rare. In this context energy refers to energy used by households, traffic, and industry. In the context of health, we have used the everyday health information literacy (EHIL) screening tool. We have discovered it to have a multifaceted structure including 'motivation', 'confidence', and 'evaluation' factors (Niemelä et al., 2012, Hirvonen et al., 2016). This study aims at exploring the applicability of the EHIL screening tool in an energy context by examining its factorial structure in a comparative manner. Also, factor scores are compared across the respondents' gender and field of study.

Methods

The data were collected with an online surveysent to all students present for the academic year 2016–2017 at the University of Oulu, Finland, in January 2017 (n = 11,381). The response rate was 12.2 percent (n = 1,390). The original EHIL screening tool was modified by adjusting its ten statements to an energy context. Also, items on respondents' background and energy literacy (DeWaters et al., 2013) were covered. Statistical analyses include an exploratory factor analysis and comparison of mean factor scores.

Results

The majority of respondents were full-time students, lived in a rental apartment, and studied natural sciences, humanities, educational sciences, medical sciences, or engineering. Their mean age was 28.1 years and 57 percent of them were female. The screening tool's factorial structure was multifaceted and resembled that of the original EHIL tool. The three factors were related to confidence in finding information ('confidence'), motivation to do so ('motivation'), and perceived ability to evaluate information ('evaluation'). The humanities' and educational sciences' students had the lowest, and engineering students the highest mean factor scores for 'confidence'. Natural sciences' and engineering students received the highest mean factor scores both in 'evaluation' and 'motivation'. The business school students, in turn, received the lowest scores in both of these factors. Male students scored higher in 'confidence' and 'motivation', and lower in 'evaluation' when compared to female students. The study is among the first to examine energy information literacy. The results are indicative. The study contributes to further modification of the EHIL screening tool to other contexts.

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Keywords: *energy information literacy, screening tool, everyday life, health information literacy, online survey*

Research Data Management among Researchers at the University of the West Indies, Mona, Jamaica

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In an era of data-intensive research, outputs represent valuable assets that should be managed carefully. With increased emphasis on managing and sharing data among researchers and academics, research data management competencies or data literacy become critical for enabling effective use of all types of data. Further, there are obvious benefits to data literacy as, according to Whyte and Tedds (2011), "effective data management provides institutions with new ways to find synergies across research groups, producing new knowledge by engaging a broader range of stakeholders, and enabling wider reuse of data in teaching and learning, commercial exploitation and policy development."

Are these competencies widespread among researchers?

This study examines data literacy of researchers and graduate students at the University of the West Indies, (UWI) Mona, Jamaica. Using an online survey instrument, the research seeks to understand the levels of awareness of effective data management practices. Convenient sampling approach was used to gather data from researchers in the Faculties of Medical Sciences, Science and Technology, and Social Sciences.

While this research replicates and continues work already done in three countries in Europe in 2016, it is hoped to garner new data on practices as seen in Caribbean researchers. Support for research data management among the academic community at UWI was identified as a strategic initiative of the UWI Libraries in 2016. Findings will be therefore be used to provide recommendations for training as well as greater collaboration between faculty and librarians for effective research data management.

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Keywords: *data literacy, University of the West Indies, Mona, research data management*

Thinking about Journalists' Place in Information and Media Literacy

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In France, since the assassination of most of the editorial staff of the Charlie Hebdo newspaper in January 2015, there has been a growing involvement of journalists in information and media literacy initiatives through personal initiatives but also more institutional commitments. Indeed, these tragic events were the occasion for many journalists to see that the limits of freedom of expression were questioned by a part of the public. They were also confronted with the speed at which "conspiracy theories" spread to the Internet and social networks after these attacks. This highlighted the new information practices of many citizens, at the forefront of whom were young people. On a national scale, for example, were initiatives carried out by the France Télévision and Radio France groups and by the newspaper, *Le Monde*. At the local level, numerous initiatives of the same type are also being developed. Since December 2016, the DRAC (regional cultural affairs directorate) of the "Hauts de France" region has proposed an experimental "residence program" for a journalist with the mission to develop information and media literacy initiatives. The recruited journalist is made available to local educational players (schools, social centers, libraries, etc.) to develop various media education projects for several months. This increasing involvement of journalists in media and information literacy deserves to be questioned, all the more so as it contributes significantly to the current revival of media and information literacy in France. Through this communication we will seek to qualify and question media and information literacy when it is implemented by journalists. We will base our theoretical analysis of the nature of media literacy (Gonnet 2001, Landry & Basque, 2015) mainly on the analysis of the results of two field surveys. The first is based on the study of the experimental set-up of the "residence program" for a journalist with information and media literacy purposes that is developed in the "Hauts de France" region. It articulates comprehensive interviews with the actors involved, ethnographic observations, and studies of institutional texts. The second is based on interviews with journalists involved in information and media literacy operations conducted by national media. To answer our research question, we will examine the representations of the actors involved (teachers, educators, activists, journalists) about information and media literacy, the media practices of young people, and the current work of journalists. On the other hand, we will propose a mapping of the actions carried out by these journalists. The reflection will raise the visibility of asking whether the relationship between information and media literacy proposed by journalists met the media practices and representations of young people about traditional media and journalists. We are interested in, among other things, the extent to which journalists who are involved in information and media literacy defend their profession and make it known to young people who move away from the media both in terms of their media practices and their representations of media and journalists in the "post-Charlie" period. As a corollary, is the question of questioning the place given to a work of critical deconstruction of the products of the traditional media. Indeed, according to our observations and interviews, what is played out, in part, in the encounter between journalists and young people, is indeed the question of the normative or emancipatory dimension, therefore illustrating critical (Piette, 2006) and political information and media literacy. Our communication was conceived in a singular format in order to echo the will of the symposium to bring researchers and practitioners of information and media literacy to dialogue. This in fact echoes research results presented by researchers and reflexive feedback from one of the journalists.

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Keywords: *journalists, information literacy, media literacy, informational practices*

Financial Literacy Competencies of Women Entrepreneurs in Kenya

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Research shows a very high correlation between financial literacy and economic outcomes. This paper summarizes findings of a study on financial literacy competencies of women entrepreneurs in Kenya and how these skills affect their economic empowerment. The study used positivist/post positivist and constructivist approaches associated with a pragmatic paradigm. Data from 400 respondents were collected through questionnaires. Data were analysed using the Statistics and Data (STATA) package. Cross-tabulation analysis and chi-square test of independence were used to analyze relationships between two or more variables. Causal analysis was used to determine how financial literacy skills affect women economic empowerment. We found that willingness to invest in risky businesses (49.62 percent), not shopping around (48.74 percent); low numeric skills (66.92 percent); or taking loans without considering the cost (74.05 percent) was undermining women's economic empowerment demonstrated by the fact that 79.68 percent of the respondents felt that their financial status was out of control and 83.59 percent felt uncomfortable about their current debt status. Husbands/male spouses still influenced financial decisions. The study was limited to women entrepreneurs in Chuka Constituency who had received funding from Uwezo Fund during financial year 2013-2014. This makes generalization of the findings to all women entrepreneurs in Kenya impossible. We suggest that an integrated approach where entrepreneurs are given credit but also trained on financial literacy skills should be adopted. Related cases can benefit from the study for comparison. Without financial literacy skills, women cannot achieve sustained economic empowerment. This leads to a low quality of life. This study is empirical, provides unknown knowledge, addresses social inequality and women empowerment challenges, and provides answers that can be used to improve literacy and highlights an agenda for literacy studies.

Keywords: *sustainable development goals, financial literacy, women economic empowerment, Kenya, Chuka constituency*

Copyright Literacy among the Literacies in Hungary

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In the light of the literature on different literacies and the related terminology, this paper intends to paint a picture of the views on copyright literacy in Hungary. It also presents the results of the Hungarian part of an international copyright literacy survey and compares them to the findings of other surveys.

The Hungarian Library and Information Science (LIS) community has been introduced to varied literacies, at least in their native language. The best-known literacy is information literacy, but step-by-step other literacies appear in Hungarian journal and conference papers. Through these channels, information professionals have become familiarized with the concept of media and information literacy (Egervári, 2014), data literacy (Koltay, 2014) and green information literacy (Koltay, 2016). Besides these papers, abstracts on different LIS subjects are available in Hungarian, where – among others – the concept of health information literacy appeared. Independently of the survey, a new paper has been published that discusses the relationship between LIS education and copyright literacy (Tószegi, 2016).

Similarly, to information literacy (Koltay et al., 2010), the term copyright literacy is translated to Hungarian differently, reflecting verbatim translations of the concepts or emphasizing literacy's meaning as being educated and having erudition.

To give a picture of the state of copyright literacy among information professionals, the multinational copyright literacy survey, scrutinizing the situation in three countries, described by Todorova et al. (2014) will be compared to the results, obtained on a convenience sample in Hungary. This will be supplemented by comparisons to the findings of other surveys.

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Keywords: *copyright literacy, survey, terminology, literacies*

Information and Media Education in the French School Context Today: A Challenge for School Leaders?

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This paper draws on the results of an ongoing research project centered on French secondary education (*collèges*, high schools) in three school districts (the *académies* of Paris, Nancy-Metz, and Lille). Our objective is to study current changes in the field of Information and Media Education (IME) in today's digital world as related to ongoing curricular redesigns. Specifically, our aim is to identify the scope and the contents of IME in order to understand whether or not, in a changing and uncertain context, secondary schools seek to implement a coherent approach to IME, providing pupils with an info-documentary perspective and an interpretative framework for understanding the world. In our study special attention is paid to the role of the different actors involved in this education. In this paper we focus on school leaders and their assistants.

Recent studies have concurred that one of the "critical ingredients" of strategic innovation in schools (Kouzes & Posner, 2007) and among library and information professionals (Rowley & Roberts, 2009) is effective leadership and good management. This issue of leadership seems, by comparison, still a peripheral subject in studies related to information and media education. In speaking about universities, Virkus (Virkus, 2015) points out that the focus is more on "how to secure management support within universities rather than how to demonstrate influential leadership in libraries". However, recent studies highlight the key role played by leaders at various levels in the university and the significance of this role with regard to developing information literacy and building efficient teams.

What can we say about IME in the French context? How do school leaders deal with this education? What is their vision of IME and how do they participate in its implementation?

In terms of methodology and data gathering, we administered - via academic mailing lists in the three districts under study - a questionnaire composed of 17 closed and open-ended questions. The questions were designed in order to understand actors' views about integration of IME: perceived importance of IME, pedagogical aims and key issues of IME, modalities of inclusion, supporting devices, collaborations and partnerships, pedagogical content including specific knowledge and progression, and barriers and aids to the implementation of IME.

The results are based on 49 responses (36 school leaders and 13 assistants); respondents are largely convinced of the importance of IME. However, school leaders do not seem to fully appreciate or recognize the importance of their role in the implementation of IME.

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Keywords: *information and media education, school leader, teacher, teacher librarian, leadership, management*

Information Safety Education of Primary School Children in Libraries

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Research background

Information safety is an important part of Media and Information Literacy (Coles, 2013). A lot of children have disclosed personal information and have had some experience with Internet threat (Livingstone, Haddon, Görzig & Ólafsson, 2011; Kopecký, 2015). Czech children have used the Internet more and have had more experience with risky factors compared to other European countries (Livingstone, Haddon, Görzig & Ólafsson, 2011). Nevertheless, information safety is currently not sufficiently anchored in the Czech primary school curriculum (Příloha č. 1…, 2016). Only technical basics are covered in the first five grades, more topics (including first mention of information evaluation) are assigned to the higher grades but a lot of information safety topics are still explicitly missing (schools can teach them but it is not necessary). Time allocation for the whole information and communication technology education is only one hour per week in all for lower grades (1st to 5th) and the same for higher grades (6th to 9th).

Objectives and methodology

This paper presents results of evaluation research of free follow up lessons on information safety in libraries for each of nine grades of primary schools (children aged 6 to 15 years). All lessons were realized in two different libraries (one in a small town, one in a big one, each cooperating with one school) and three more schools in 2013 to 2017. The libraries were selected though purposive sampling. They cooperated with schools for some years and they are active in information literacy education, but before these lessons they did not cover topics of information safety. Participatory observation and smile sheets were used to evaluate lessons and children's knowledge of information safety.

Outcomes

The results showed knowledge gaps supporting risky information behaviour (mostly online), and evaluation at the first two levels (reaction and learning) of Kirkpatrick's model (Kirkpatrick, 1996). These results can be used as arguments of lessons effectiveness, transmission in other libraries, and in order to plan other information safety lessons according to children's needs. Lessons based on constructivist pedagogical paradigms (ERR frameworks and methods of reading and writing for critical thinking) were evaluated by children positively in smile sheets. That was indicated also by observation. Children were active in all activities and they liked to share their own experience and opinions on working with information and information technologies. But they also showed some incorrect pre-concepts, e.g. which behaviour is not cyberbullying, and that their reaction should be stronger aggression. Content of the lessons, influence of the institution where they took place and school teacher, form of lessons, and ways of engaging pupils were analysed. Some differences in these aspects among classes and grades were also found.

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Keywords: *information safety, education, primary school children, libraries*

From Studio Space and Makerspace to Workplace: Adapting Instruction and Outreach to Fit the Needs of Practitioners from the Arts to Engineering

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The specialized instructional needs of practitioner communities in academia—the people who apply knowledge to create things, whether art, buildings, or bridges—is frequently underappreciated in information literacy. Often, library instruction conflates the needs of this group with the needs of a typical group of scholars. Yet, writing a research paper is very different than creating something. Strict adherence to a purely academic approach fails to serve students who will encounter very different norms in their future workplaces and leads to the impression that information literacy is irrelevant for practitioners (Hicks, 2015). This can easily demotivate students. A shift to understanding the unique needs and approaches in the applied fields will lead to richer and more effective instruction and outreach to practitioners. In this paper, we take a broader approach to this group and review the literature of information behavior in practitioner groups in order to apply it to their information literacy needs.

We examine practitioners as a group, ranging from artists to engineers, who nevertheless share commonalities rooted in the applied nature of their studies. All of these students are engaged in a praxis that combines theory with practice. A similar cycle of research-design-build (or create) applies across the group: a studio artist might research a concept, and react to that in their design and creation while an engineer might research basic physics concepts to apply to a component design, or identify key prior art (Fosmire & Radcliffe, 2014). In each case, the ability to identify and assess another field's ideas and apply them in practice is key. Also in these areas experts are often identified by their long professional career, mastery of a craft, and tacit knowledge, rather than academic credentials. Students of practice must be able to recognize others—whether they be professors, lab managers, or other artists—as information resources, a skill that can be challenging to students trained solely in an academic tradition (Head, 2012).

As well as commonalities of practice, these fields share a reliance on spaces for building and creation. Their unique spaces—labs, makerspaces and studios—have unique affordances for library outreach, and their own associated information-seeking behaviors that must be acknowledged in information literacy (Hemming, 2006). These spaces of doing have strong correlation with students' future workplaces, allowing information literacy learned in this context to be more easily transferred, consequently promoting critical and creative approaches in the workplace.

Within each space, practitioners in the academy often move between two communities of practice, the academic sphere and that of their applied work, each with their own norms, jargon, and requirements. Students must master the discourse of both these communities. For artists, this might be facility with International Art English; for engineers or environmental designers it might be familiarity with technical writing. By adopting the norms and language of students' applied as well as academic activities, library instruction can be more effective and relevant to students' future careers. A recognition of information behavior in practitioner communities underpins effective information literacy for these fields.

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Keywords: *practitioner communities, professional information literacy, learning spaces*

Demographic Characteristics and Personality Variables as Predictors of Health Information Literacy in Young Adults

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Background and Objectives

Because of an increasing personal responsibility for health concerns, health information literacy (HIL) – the ability to perceive information needs, to identity and use appropriate sources as well as to understand, evaluate and use obtained information - is becoming a significant factor in health care, disease prevention and health promotion. Despite its universal importance, HIL shows a great deal of individual variation. Therefore, the present study aims at identifying personal factors that might explain this variation in young adulthood, a phase of life that is usually not yet marked by illness, and, thus, comprehensive health information searching experiences. It examines whether HIL is associated with basic personality traits, demographic characteristics (age, sex), and educational variables. Whereas there has been research focusing relations between personality traits and information-seeking behavior (see: Heinström, 2005; Halder, Roy & Chakraborty, 2010), so far, no studies have investigating the associations between personality and HIL. Additionally, although positive effects of education on levels of HIL are well documented (Eriksson-Backa, 2014), evidence for the impact of vocational choices on HIL is lacking. It was assumed that choosing a health-oriented occupation would be associated with higher levels of HIL.

Methods

Participants were 317 German vocational students aged 16 to 34 years (M=20.8, SD = 2.99, 62.1% female) from health-related, commercial, and technical professions. Along with demographic characteristics (sex, occupational direction, level of education), basic personality dimensions were measured by the 30-item-version of the NEO-Five-Factor Inventory (NEO-FFI-30, Koerner et al., 2008). For the assessment of HIL, participants completed the Health Information Literacy Knowledge Test (HILK, Mayer & Holzhaeuser, 2015).

Results and Discussion

The research question was examined by blockwise multiple regression analyses in three steps. In Block 1, sex and age were used as predictors, in Block 2, educational variables were added, and Block 3 included personality factors. Whereas sex and occupational direction did not predict HIL, a significant positive effect of level of education as well as a negative effect of extraversion was found. The results replicate findings supporting the major importance of education for HIL. In addition, they illustrate the usefulness of taking into account personality variables which might have an impact on the acquisition of HIL. Finally, they question that being engaged in health-related occupations alone has a positive effect on HIL. Further studies should strive to replicate the findings with samples from different health professions and to longitudinally analyze the long-term development of HIL as a function of personal versus job-related variables.

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Keywords: *health information literacy, individual differences, sociodemographic factors, personality, education*

Data Literacy and Research Data Management Practices of Researchers in Turkey

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Research data management (RDM) is about "the organisation of data, from its entry to the research cycle through to the dissemination and archiving of valuable results" (Whyte & Tedds, 2011). It consists of a number of processes such as the design and creation of data, storage, security, preservation, retrieval, sharing, and reuse (Cox & Pinfield, 2014). Storage, organization, and access of data and data sets for reuse provides many advantages such as efficient use of the limited resources, repeatability, and verification of the research, and the use of data for different purposes. Today, scientific research is more data intensive and collaborative than in the past. Thus, RDM and data practices of researchers have become extremely important (Tenopir, et al., 2011).

Due to lack of necessary policies, strategies and regulations regarding RDM, the majority of research data in Turkey are not archived and cannot be accessed and re-used by researchers. Neither the national funding agency for scientific research (TUBITAK) nor other funding agencies including universities have a RDM policy and mandate and do not require a data management plan from researchers they fund. As a result, none of the research institutions and universities have yet implemented services for research data storage, analysis, and curation (Tonta, 2013; Aydınoğlu, 2016). However, starting from 2012, there have been several initiatives that aimed to increase awareness towards the importance of RDM.

The aim of this study is to examine the current state of data literacy, data sharing and reuse perceptions and practices among researchers and to find out, if any, differences in practices and perceptions across age groups, gender, status, and subject disciplines. It also aimed to understand the training needs of the researchers.

An online questionnaire survey was distributed to researchers in about 200 universities in Turkey. Data collection is still under progress. So far, over 400 researchers participated in the survey. Preliminary findings indicate very low levels of data literacy, RDM awareness, knowledge, and skills among participants. The majority of researchers are uncertain about RDM related issues. Findings also indicate that, while participants have no formal training on RDM related subjects, they are willing to take part if training is provided. A majority of participants agree that universities should be the responsible body for RDM.

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Keywords: *research data management, data literacy, data management, researchers, Turkey*

Acquiring Stock Market Literacy

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Mathematics should be taught within a context that allows learners to understand the significance of its content (Van den Heuvel-Panhuizen & Drijvers, 2014). As well, many of the most recent suggestions for mathematics content emphasize contextualized learning in real life, meaningful situations (National Council of Teachers of Mathematics, 2000; National Governors Association, 2010). In order to address this call for learning mathematics with meaning, an interactive game was used to teach the United States stock market. This free, interactive stock market game enables players to consider how events, including profits and losses, shape the stock market. . The game can be integrated into both secondary and university level courses. Students are provided with an opportunity to buy/sell/short stock in a competition that can take place over several weeks or a complete school year. An important element of the simulation is that students learn in an inquiry-based manner and in real time. There is potential for both success and failure, and chances for students to redeem themselves if missteps are made. No prior stock market knowledge is necessary and the interactive game is quite easy to implement.

The objective of this research was to explore how this online tool supports preservice teachers' knowledge and growth in understanding the stock market. Marketwatch is an open source virtual game centered on the US stock exchanges and was used to situate learning. MarketWatch (http://www.marketwatch.com/) is an easy to use, popular website that allows users to create games based solely on the American market including the NYSE and NASDAQ. To accommodate an international audience, The Global Virtual-Stock-Exchange (http://www.virtual-stock-exchange.com/) is another free website that allows users to create and join games based on over 30 markets throughout the world. Using MarketWatch, interactive games can be created with specific rules that contain (or exclude) features including: (1) starting balance, (2) price limits, (3) commissions, (4) volume limits, (5) shorting, and (6) margin selling. A game was conducted with preservice elementary STEM teachers in a mathematics methods course in the southwest United States. At the start of the interactive game, students were provided with $25,000 and had to complete at least 15 trades by the end of the game. The game took place over a semester.

Case study methodology was used to explore the following research questions: What changes in a student knowledge regarding the economy occurred due to participation in the virtual game focusing on the stock market? What is the pattern of thinking that occurred due to a student's exposure to the virtual game focusing on stock exchanges? Exploratory case study methodology was used because the study focused on a contemporary phenomenon within a real context and attempted to answer general questions meant to facilitate further examination of the phenomenon observed (Yin, 2013). The data sources were the student's written responses to prompts throughout the semester. As a case study, one student, Alex, will be presented to show his trajectory in thinking. He started out with a very brief description as to why he bought a particular stock. Results indicated that Alex showed a much deeper understanding of the stock market through his interactions at the completion of the game. He commented specifically about how events shaped his progress in the game and he was able to provide justifications as to why he thought stocks performed as they did.

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Keywords: *stock market literacy, interactive games, mathematical thinking, STEM teachers*

Information Specialists Promote Workplace Information Literacy – a Case Study of the Health Care Libraries' Expertise and Roles in a Working Life Project

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The nature of information specialists' work is changing from supporting the searching of documented information to participation in research and development processes. In particular, the evolving research, development and innovation activities at the universities have presumed and enabled new action models for information services. The article examines a shift of expertise beyond traditional library services. Today, information specialists have to develop the skills to work in new information landscapes (Lloyd 2010), and to develop knowledge and participation practices together with other experts (Sundin & al. 2008).

The subject of the study is the expertise and roles of information specialists in a working life project that is described as a learning community (Paavola & al. 2004). The project aimed at improving work practices of nursing and health care in different kinds of organizations including hospital wards, emergency rooms and municipal clinics. Particularly, the use of evidence-based knowledge in patient care included in work practices to improve. The information specialists were expected to have a role in the knowledge sharing and creation practices between working life and higher education organizations during the collaborative project. The research data comprises of interviews, documents and participation in the activities of the project.

Three different orientations of information specialists participating in the project were identified: the information retrieval specialist, the information literacy instructor and the developer of knowledge practices. The main value of studying information specialists' participation in working life projects is that when new knowledge practices are applied in dynamic knowledge and learning environments, it is possible to get and develop ideas and guidelines for the redesign of their work and collaboration practices (Somerville, Howard & Mirijamdotter 2009). Furthermore, the development of the expertise of information specialists has significance for the development of working life. The article discusses how the three identified roles of information specialists are integral to the different and situationally fluctuating concepts of knowledge, knowing and practices (Gherardi 2006; Orlikowski 2002; Schatzki 2002).

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Keywords: *knowledge practices, roles of information specialists, health care libraries, working life context*

Digital Competence of Future Teachers

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Students who are studying for the teaching profession (Chen, Lim & Tan, 2010), are members of the digital generation (Green & Hannon, 2007) and they are enrolled in modern education. Modern education is defined by changes in educational competencies, consisting of eight key competencies (European Commission, 2007) that modern educated individuals should exhibit in order to qualify for the future labor market. One of the crucial competence of modern educated individuals is digital competence. Digital competence relates to the field of information technology. A digitally competent individual possesses the basic knowledge, skills, and attitudes related to the theoretical and practical knowledge of basic applications (tools) for the search, collection, organization, storage, and critical evaluation of information (European Commission, 2007; Tuđman, 2014). Since future teachers are members of the digital generation, the authors are interested to find out what students (future teachers) consider as essential digital competences necessary for their future teaching profession. We are also interested in knowing if they think that competence, which is developed in existing curricula, should be further developed according to modern educational trends. We studied a sample of the students in the humanities and social sciences who are studying at the undergraduate and master's levels in the Faculty of humanities and social sciences at University of Zagreb, the largest teaching faculty in Republic of Croatia. Research was conducted using surveys with opened and closed questions. Students were asked to rate their attitudes toward necessary digital competence of future teachers who will educate future generations of digital students using Likert scales.

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Keywords: *digital competence, teachers, students*

Outcomes and Challenges of Offering an Information Literacy Compulsory Undergraduate Credit Course: A Mexican Case

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The aim of this paper is to report the learning experience evaluation of an information literacy (IL) undergraduate compulsory credit course in a country where information skilled lecturers tend to be scarce. Students should begin to develop information competencies during their K-12 education (Julien, 2017); however, this is seldom the case in the Mexican educational system (Cortes, 2012), where students enroll at universities with limited IL training. This is a challenge for universities that have to empower incoming students in information use in their four-year span of undergraduate studies. Such a goal requires different actions to accomplish other than the most common ones, short hands-on library instruction, one-time IL lecture, and resource demonstrations. These strategies have the constraints of time and provide no in-depth IL training for students. A more comprehensive and formal approach is to deliver a full IL course, a decision in this regard taken by CETYS Universidad, whose IL evolution has been previously reported in the ECIL Conference Series (http://ecil2017.ilconf.org/). The CETYS IL course is an eight credit compulsory learning experience for first-year students. The first phase of the process was to develop the course content and to lobby the university academic bodies to approve it. Once the course was authorized to be part of every undergraduate curriculum, the second phase was to identify lecturers to facilitate the learning experience for 17 groups that included 361 students. The learning experience of this first IL course cohort was evaluated as an exploratory study, using three techniques to gather data: a student questionnaire, a faculty focus group, and the evaluation of student IL essays contrasted with a non-random high school paper. The essays were handed on voluntary basis. Here in this paper the outcomes of the last two techniques are reported. The selection of the campus (Tijuana), out of three, was for researchers´ convenience, where they could have easy access to the sample. The focus group included all campus IL faculty population (nine cases). The essays underwent a content analysis technique, and student participation was non-probabilistic, because papers were handed on voluntary basis. The results show that lecturers were unaware of their own IL skills limitations, and were generally happy with their IL facilitation performance. Although students did improve their information skills, further study needs to be done to assess more variables in regard to the library role and lecturers' IL skills, mainly among those whose information-competencies were higher. The study results will be forwarded to the university authorities for potential IL course implementation improvement.

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Keywords: *information literacy credit courses, information competencies credit courses, information literacy credit course assessment, information skills teaching, information competencies lecturer assessment, undergraduate information literacy course*

Search Engine Literacy

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If SEO (Search Engine Optimization) is well known, the aim of this article is to show that search engine literacy is often very weak for different kinds of users. As a professor, every year I asked my freshmen students if they could explain how Google works and how it ranks websites. Not one of my students can answer this question. This is particularly disturbing because my students want to work in information or communication systems. Moreover, it is the failure of the previous training system which should have given them the keys to understand how the main search engine operates.

Many studies have shown that students have great confidence in the results given by Google (Simonot, 2009, Hargittai &t ali, 2010), but they do not develop any critical thinking about the methods of rankings.

Moreover, the younger generation is not the only one who does not understand how Google works and how Google makes money. In a study of seniors and digital health literacy (Vigouroux, Le Deuff, 2015), we have shown that Google was the first tool used to access information on the web (92%). But the design of results is not totally understood by older users who cannot very often make the distinction between 'natural search results' and ads (Le Deuff, 2015). At the end of this study, we develop an application to help users evaluate their level of digital health literacy[6]. The results show that the level of health literacy is better than the level of digital literacy because more than 70% of the respondents do not know how Google works.

Our proposal is to consider search engine literacy as an essential part of transliteracy (Thomas et ali, 2007) because that means understanding that search engines like Google are a new kind of media, and are major actors of information retrieval. Search engine literacy offers the possibility of studying the operating mode of Google and studying algorithms from a different perspective than the mathematical or computer science approaches.

This literacy cannot be grounded only on good practices in the use of Google, like the demonstration of advanced research based on a simple search literacy (Wilson et ali, 2016). The project of search engine literacy is more ambitious and needs a didactic of Google. We will show some results of an experiment with our students during an SEO course.

This literacy is a good beginning for explaining the history of the web and the development of a digital and information culture. This is a good method for understanding data literacy and the methods of data treatment. Search engine literacy makes the link between information literacy and data literacy too. In conclusion, we want to explain that this literacy can be the first step in the democratisation of Google.

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Keywords: *literacy, transliteracy, search engine, search engine literacy, Google*

[6] http://www.megatopie.info/testor/enquete.html?e=19

Information Culture of Students in the Academic Environment – Finding One's Way through Studies

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Today, a university presents an information-rich environment that provides challenges for both faculty members and students. This paper discusses the results of a recent qualitative study that aims to understand students' values, norms, and practices – that is, their information culture (Choo, 2002) when they are attempting to retrieve course-related information from their teachers and fellow students. The students we studied are expected to enroll to several courses (at least for 24 European Credit Transfer and Accumulation System points) each semester. Therefore, enrollment and home assignment deadlines, home assignment descriptions, and many other practical issues related to academic life raise lots of questions. Many students in our sample are also Open University students – besides learning they also work and have parental duties – therefore the academic issues form a small yet important part of their life worlds and the need to obtain correct information about their studies on time becomes critical.

Our study involves 100 University of Tartu students who have studied information work related curricula in Information Management, Information and Records Management, or Librarianship and Information Environments. The interviews were conducted from 2015 to 2016 in the framework of qualitative research methods courses; both interviewers and interviewees were students in this course. We must keep in mind that the interviews were conducted as homework assignments, therefore the quality of those interviews varied. However, we hope that the relatively large number of interviews still enables us to overcome this shortcoming. For this study, we only used the interviews where the interviewees granted permission to use their interviews for further research. We analyzed the semi-structured interviews with students by applying principles of qualitative content analysis. We are aware of possible subjectivity of our research results and aim to reduce it by careful reflection on our work.

As faculty members, we find that better understanding of our students' course-related information needs and information culture is important to not only support their study process but also to prepare them for work in information-rich environments. Our sample consists of students who are presumably able to start their career as information specialists after graduation or who are already working in this kind of positions. Yet, during our daily job we, as faculty members, have noticed mixed feelings or experienced noncommittal attitudes among these students regarding their information needs at the university. The notion of 'information culture' is formerly well-known in the context of different kinds of companies and firms (Choo, Bergeron, Detlor & Heaton, 2008), it has been applied to explain the organizational effectiveness (Choo, 2013), paying attention to the members of staff of organizations (Lauri, Heidmets & Virkus, 2016). We suggest treating the students within their community of practice with its own information culture. On the basis of our study we will propose practical recommendations and tools to our colleagues teaching courses about learning skills at universities but also to other parties who may be interested in supporting the social well-being and information culture of students.

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Keywords: *information culture, students, student-faculty communication*

A Method Combining Deductive and Inductive Principles to Define Work-Related Digital Media Literacy Competences

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The ubiquity of information and communication technologies in the workplace has fostered a surge in distant teamwork practices. The LITME@WORK project aims at defining the digital media literacy competences of office workers related to distant teamwork. Our approach is focused on the definition of competences from the point of view of workers involved in collaborative projects supported by information and communication technology (ICT). The question we propose to examine in this communication is how to infer competences from the observation of collaborative practices.

We collected qualitative data in ten Belgian public and private organisations that have introduced changes in their work environment with the intention of enhancing teamwork and/or distance work with ICT. In each organisation, we conducted six guided-tour interviews with leaders and members of two different teams. We also spent half a day in each organisation observing actual work practices.

Our method combines deductive and inductive approaches. From a deductive standpoint, we reviewed the literature on collaborative ICT-mediated work in the field of Computer-Supported Cooperative Work. This allowed us to build an interview guide based on eleven types of practices, such as authoring a document collectively, or managing one's tasks in relations with others (Collard et al., 2016). From an inductive standpoint, our analyses use principles from grounded theory and phenomenography to build a theoretical understanding of the studied experiences (Charmaz, 2006).

We examine the way workers experience (Marton, 1986) the computer-supported cooperative practices they are engaged in by confronting, for each practice, the informant's activity (what they do) with their tasks (what they are supposed to do), their goals (what they want to do), and the activity of the members of their teams (what others do). We identify their "successful practices" (when all four dimensions match) and their difficulties (when mismatches occur). We articulate these analyses in three ways: (1) by examining the relationship between the traces of each practice and the informant's discourse on it; (2) by comparing the different practices of each informant; (3) by comparing the practices of different informants. This trialogical articulation allows us to define digital media literacy competences and their levels in the sociotechnical context of distant teamwork.

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Keywords: *digital media literacy, grounded theory, phenomenography, collaborative practices, distant teamwork*

Information Literacy Vis-a-Vis Epidemic of Distrust

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Overview

Information literacy has long been understood in a broad context. Among other aspects, it is a competence to evaluate information and select it according to credibility and trustworthiness. However, the events of the last year (e.g. Brexit, US elections and others) have proven that credibility and trustworthiness are still underestimated and urgently require more attention. Recent development makes us more forcefully realize that the system (objective) relevance of information can be completely different from perceived user-based (subjective) relevance as defined by Saracevic (2007), Hjorland (2010) and others. Users may not consider information to be credible if it only meets the theoretical set of facets anchored in the definition of quality information (e.g. trusted information source, citations, links to the underlying data). The decisive factor that leads either to the acceptance or to the rejection of quality or misleading information is 'trust' and/or 'trustworthiness'.

If librarians and information professionals are still to successfully execute their fundamental role as information mediators, they must thoroughly understand the phenomenon of trust and credibility and become trusted members of the 'social bubbles' of those that come from different social groups and classes. The concepts and principles of trust as one of the main influential factors of social interaction and coexistence have been explored by many disciplines, especially psychology, sociology, theology, economics, political science and others (Weber & Carter, 2003). The question is to what extent has this social phenomenon been examined from the perspective of information science in respect to trust construction, trust violation, reconciliation of trust and the practice of trust itself.

Method and outcomes

The main research goal was to complete a literature review in the field of trust, trustworthiness and credibility in the LIS domain. The prime resources were the LISA and LISTA databases in the timeframe 2008-2016. We have sorted the outcomes based on the specific research orientation of the papers. We have tried to identify core research topics as well as research gaps on the issue of trust and trustworthiness in the LIS domain. The outcomes are presented with the use of the Bubble chart data visualization method. Understanding the issue of trust and trustworthiness may make information professionals not only part of the problem of a "post-truth society", but certainly a crucial part of the solution.

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Keywords: *trust, trustworthiness, information literacy, literature review, LISA, LISTA*

Information Overload in a Disciplinary Context

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Information overload is a phenomenon that has received a lot of attention over the years. This phenomenon has been the subject of numerous studies from a variety of disciplines. For example, in the Web of Science database, 2,469 publications were published under the topic area 'information overload' in the period from 1990 to 2017. In the beginning of 1990s there were only few information overload research publications, but the number of publications has been growing steadily; for example, 222 publications were published in 2014, 237 publications in 2015 and 240 in 2016. The highest contribution to information overload research comes from the computer science research community. Fifty-six percent (1,382) of publications come from computer science, followed by engineering, 20.5 percent (507); business economics, 11.4 percent (281); information science and library science, 10.2 percent (251; and telecommunications, 5.4 percent (134).

One of the first social scientists to notice the negative effects of information overload was the sociologist Georg Simmel who hypothesized in the beginning of the last century that the overload of sensations in the modern urban world caused city dwellers to become jaded and interfered with their ability to react to new situations (Jones, 2003, p.662). Futurologist Alvin Toffler further popularized the term 'information overload' in his book, *Future Shock* (1970). Information overload occurs because the degree to which we can effectively process information is limited by the finite capacity of human cognition. Information overload can be defined as the state of an individual or system in which excessive communication inputs cannot be processed and utilized, leading to breakdown (Jones, 2003, p.660).

The purpose of this paper is to present the results of a study that explored how students from three different disciplines perceive information overload and cope with this phenomenon. We have formulated three research questions: How do students perceive information overload? How do students cope with information overload? What are the disciplinary differences in coping with information overload?

The research involved a mixed methods research strategyusing both quantitative and qualitative methodologies, built into a two-stage research design. The first stage was a small-scale questionnaire survey among students from three disciplines: psychology, mathematics, and informatics. The results of the survey provided a broad picture of a phenomenon and helped to identify relevant interview questions. The second stage involved the collection of qualitative data. In-depth interviews with students were conducted in three disciplines (psychology, mathematics and informatics). Descriptive analysis was applied to the questionnaire survey data, while the qualitative data was analyzed using a constant comparative method of data analysis.

The authors will present the results of this study that show how students from three different disciplines perceive information overload and cope with this phenomenon.

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Keywords: *information overload, information literacy, students, higher education, mixed-methods research*

Information Literacy within Serbian Higher Education Area with the Comparative Overview – Serbia, UK, USA and Australia

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In the 21st century, information has become one of the most valuable resources in every field of human endeavor. We are constantly acquiring new information and knowledge that stems from it. In fact, one might argue that we are overwhelmed with the ever-growing stock of information that needs to be evaluated and used adequately. This can only be achieved if the information holder has a high degree of information literacy skills, which is why information literacy courses should be included at all levels of studies, starting from primary education, but particularly at the higher education level of studies.

Considering that the IT sector is one of the most promising economic branches in Serbia, and that its potential has not yet been sufficiently exploited, Serbian educational institutions are adjusting their curricula in order to create the workforce of the future that will, inter alia, possess a high level of information literacy skills. The paper is therefore devised so as to present the current state of information literacy education in Serbia by interpreting the results of students' information literacy skills survey. A paper questionnaire was distributed to students of five different faculties of the University of Belgrade. The survey indicated somewhat lower level of information literacy competencies than expected, resulting from the fact that out of five selected faculties only the Faculty of Philology offers the course *Information Literacy*; hence its students have demonstrated better understanding and proficiency in information literacy than students from other faculties. The survey results led us towards two conclusions: 1) each of these faculties should offer at least one elective course in information literacy; 2) students from faculties that do not offer information literacy courses should elect it as part of their own curricula at another faculty pertaining to the same university. Therefore, the main objective of the paper is to support this type of modification not only at the level of this particular university, but at the Serbian Higher Education Area level in general.

Furthermore, we will reflect upon the developments in the field of information literacy education in the UK, USA and Australia, considering that these countries have a long tradition of teaching information literacy at the higher education level, and compare them to those in Serbia. This particularly refers to making a comparative overview of information literacy forums, committees and institutes that were established in the UK, USA and Australia, initiatives that were undertaken in the field and reports that influenced information literacy higher education curricula in the aforementioned countries along with those in Serbia, all the while bearing in mind that they provide an excellent example for incorporating information literacy into higher education area.

Keywords: *information, literacy, curricula, Serbia, UK, USA, Australia*

Information Culture and CETYS University WASC Accreditation: The Library as Stakeholder

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The information culture (IC) experiences of CETYS University (Center for Technical and Higher Education) is analyzed in this paper from the librarians' empirical perspective, taking as a starting point, the research carried out by Lau and Machin-Mastromateo (2014, 2015, 2016). The goal is to analyze the development of IC as well as the actions that have been undertaken and the proposals that are yet to be considered to consolidate IC. CETYS is immersed in an educational evolution to fit the academic role national and international accreditation processes have demanded since 2010. The institution is part of the Mexico-United States border socio-cultural region, as reported in previous ECIL published proceedings. The University has succeeded in meeting the high standards of the Western Association of Schools and Colleges (WASC, USA) accreditation, thus becoming one of the six universities in Mexico and one of the few (19) in Latin America to gain American accreditation.

As a consequence of this accreditation process, CETYS proposed an action plan to achieve and sustain WASC accreditation: the *CETYS 2020 Development Plan.* The *Plan* includes several initiatives, among them the "Differentiating Element of the CETYS Graduate" (EDEC), an initiative that consists of five graduate profiles, of which IC is one. The institution assumed IC as an element that ought to distinguish and characterize graduates of any major that the university offers. IC EDEC is considered a seminal element in training professionals to be able to understand their information needs and how to search, evaluate, and use information. The EDEC requires faculty, library and information technology staff to work as a team to achieve such a goal.

In studying the EDEC IC outcome, we relied on the institutional plans and reports for five of the eight objectives that involved the librarians. Some of the outcome actions within these objectives are hiring professional reference librarians, the use of standard metrics to demonstrate learning outcomes in students based on their demand of the library and its services, the creation and implementation of a compulsory six-credit information literacy course, the editing of a writing and style manual, as well as the development of a rubric to guide information skills in an undergraduate syllabus. These actions have been implemented or were re-examined before the previous WASC evaluation in 2017. These achievements have enabled faculty, students and librarians to prepare themselves for a cultural change around information. The ultimate institutional goal is a cutting-edge library IC structure such that the IC is considered a key EDEC feature.

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Keywords: *information culture, information literacy, higher education CETYS Universidad*

Subjective and Objective Measures of Health Information Literacy: Do They Provide Complementary or Redundant Information?

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Background and Objectives

To assess health information literacy, most research has relied on self-report questionnaires. While these subjective measures are usually reliable, their validity has often been questioned. Other studies have applied objective tests of basic functional health literacy. Still, these tests fail to reveal individual differences in advanced skills related to searching and selecting health information. Therefore, the Health Information Literacy Knowledge Test (HILK) was developed to assess knowledge about these complex skills which are fundamental to making well-informed health-related decisions. The 24-item multiple-choice test is based on a skill decomposition derived from the Information Problem-Solving Model (Brand-Gruwel et al., 2009) and the Big6 skills approach (Eisenberg & Berkowitz, 1990). The present study seeks to provide evidence for the usefulness of the HILK by: a) examining its relations with three established subjective measures of health information literacy and the related construct of health literacy, and b) analyzing the predictive value of objective and subjective health (information) literacy measures for participants' current physical and mental health status.

Methods

Participants were 144 German university students (80.5 percent humanities or languages, 19.5 percent mathematics or computer sciences) aged between 18 and 33 years (M = 23.40, SD = 2.96); 69 percent of them were female. Data collection took place in supervised group sessions. All measures were completed in an online format. Besides the HILK, the EHILS (Niemelä et al., 2012), the eHEALS (Norman & Skinner, 2006) and the HLS-EU-Q47 (Sørensen et al., 2013) were administered. To assess health status, the SF12 (Bullinger & Kirchberger, 1998) was used.

Results and Discussion

While the three self-report questionnaires were highly intercorrelated (.38 <= r <= .57), their correlations with the HILK were considerably smaller but at least marginally significant (.13 <= r = .22), supporting the assumption that both types of measures assess related constructs but are not redundant. In multiple regression analyses, the HILK scores predicted mental and physical health status. On the other hand, there were no bivariate or multivariate associations of the subjective health (information) literacy measures with both health indicators. Further research is needed to corroborate the robustness and generalizability of these small effects, and to identify the mechanisms linking knowledge about health information seeking with health status. Nevertheless, it is concluded that the HILK is a research tool which complements subjective assessments of health information literacy and may even be more useful than these more established measures when it comes to predicting health outcomes.

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Keywords: *health information literacy, health literacy, assessment, health status, questionnaires, knowledge tests*

Health Information Literacy

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Session Topic and Objectives

The term 'health information literacy' denotes a comprehensive set of abilities that enables individuals to specify their health information needs and to seek, retrieve, evaluate, and use health information to make adequate health decisions. The construct combines two concepts from different research traditions, namely "health literacy" and 'information literacy'. Thus, research on health information literacy may draw on theorizing and methodologies from both fields.

The objective of the special session is to provide an overview of current empirical research on health information literacy, including interdisciplinary perspectives from information and communication sciences, library sciences, and psychology. Workgroups from Finland, Germany, Iceland, and Namibia will present results of their quantitative as well as qualitative research. The seven papers submitted to this special session refer to:

- the assessment of health information literacy by self-report questionnaires (Keränen et al.) and knowledge tests (Mayer);
- the examination of health information literacy as well as the identification of its predictors and correlates in different age groups, including older adults (Enwald et al.), vocational students (Kuhberg-Lasson et al.), and university students (Mayer), and in populations with special information needs (Einarsdóttir et al.);
- health information literacy in different information contexts defined by medium (Huhta et al.) or information topic (Keränen et al.);
- interventions supporting health information literacy (Einarsdóttir et al.; Nengomasha et al.).

The special session might furthermore stimulate international research cooperation in this research field which could focus on the translation of research tools with the aim of intercultural comparisons regarding the levels and predictors of health information literacy, its behavioral and psychosocial outcomes, and the design of interventions.

Submitted papers

Einarsdóttir, S. B., & Pálsdóttir, A. Parents of Children with Disability or Long-Term Illness: The Importance of Supporting Their Media and Information Literacy. Department of Information Science, University of Iceland.

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Keywords: *health information literacy, assessment, personality, university students, older adults*

Food Logging: a Practice-Based Exploration of an Information Literacy Landscape

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Since the 1930's it has been recognised that recording one's diet can aid in healthy eating. Increasingly, food logging apps such as the popular MyFitnessPal (over 80 million users worldwide), are making this easier. People are able to quantify food, exercise and symptoms as part of a growing interest in "life-logging": the systematic recording of data about the self (O'Hara et al., 2009). Such apps are an important new source of information, but they have been little studied from an information literacy perspective. There is increasing (health) Information literacy and interest in the body as a site of information practice (Yates, Partridge & Bruce 2009,2012).

We report on a small qualitative study with food logging app users that explores what it means to be information literate in the landscape of food logging. Data was gathered from 5 interviews and 1 focus group (7 participants). We adopt a practice based approach to the analysis of the data. In different sites, where individuals engage with bundles of practices, each potentially has its own local definition of information literacy (Lipponen 2010, Lloyd 2010a,b, Tuominen et al., 2005). Lloyd, (2010a) calls these settings "Landscapes". There are three modalities underpinning the knowledge domain in a given landscape: Corporeal, representing bodily information gathered from the self or from others in the landscape; Epistemic representing formal or codified information; and Social, representing the sharing of information and practice (Lloyd 2010). These 3 modalities are explored in this landscape.

Findings show that for these participants, food logging revolves around the epistemic modality of information, but it is user-created information. Being information literate means understanding one's role as an information producer. Food loggers develop individual recording practices and downplay the sensory experience of food in favour of datafication. Social recommendations informed app choice, but data was rarely shared with others. Food loggers are concerned with data quality at the point of recording and develop a critical awareness of information quality provided by the apps. They have a strong sense of learning about healthy eating.

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Keywords: *information literacy, landscape, food logging*

A Study on How to Equip Students with Scientific Communication Skills

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Scientific communication is one of the important skills for students in the 21st century, because information and communication technologies change our way of communication (Hurd, 2000). In particular, social media have created new ways for sharing ideas and effective communication. Sharing information on social media has brought about an information explosion at an unprecedented scale. This information explosion has caused the problem of managing the information. That is why we need scientific communication skills. Scientific communication is a set of skills for accessing, evaluating, using, presenting and sharing information in different settings. Scientific communication is also defined as share research results in oral, written or visual ways (White, 2009). Students need to know how to find, evaluate, use, cite, create and present information.

The aim of the study is to equip students with scientific communication skills. Therefore, a Scientific Communication Curriculum has been developed and implemented to 6th grade students. The curriculum focuses mainly on the following skills: Access to information, effective listening and note taking, information representation, scientific reading and writing, presenting and sharing knowledge, called 'scientific communication skills'. In addition, a web site, including PowerPoint presentations, videos, activities, and a guide for teachers, has also been designed to deliver the curriculum to teachers and students. The aim of the web site is to offer access to resources at any time from any place. Blog usage is one of the tools for the scientific communication process. In this part of the study, students were asked to write a blog on three different given topics. Initially, students were asked to create their own blogs. They search the given subject using different resources, evaluate and write about them in their blogs. Blog writings were evaluated through a rubric developed by the researchers. Blog writings and curriculum implementation lasted for seven weeks. In addition, students' and teachers' opinions were asked on the scientific communication process.

The researchers posed the following questions:

1. How the students' blog writing skills changed at the end of the scientific communication curriculum?
2. What are the thoughts of the students and the teachers about the scientific communication process?

Research was conducted within the case study research method and quasi-experimental study design. This study revealed the gradual development of students' writing skills with using digital tools, and also explores the effect of scientific communication curriculum on writing skills. Students have also learned the rules of sharing information and how to comment on social media through this study. Additional implications will be discussed in detail in the study.

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Keywords: *scientific communication, digital tools, blogs, writing skill, information literacy, social media*

Information Literacy and Media Literacy: Practices of Information Value by Teenagers (at School)

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The purpose of this paper is to show how the question of information value is at the heart of information and media literacy (Maury, 2010) of teenagers. It is necessary to question what is hidden, in the leaks of the practice, behind a French educational apparatus (Foucault, 1976), "*L'éducation aux Médias et à l'Information*" (EMI, that emphasizes training in critical thinking.

Objectives and assumptions

This communication is at the crossing of two studies: (1) a thesis on teenagers' informational practices and (2) a collective study about media and information education. The question of the thesis was to understand how to build, name, negotiate the information value between teachers and middle school students. In the digital era, there are changes inside the production and distribution regimes of knowledge and media discourses. They are aknowledged by the new french syllabus, EMI. Furthermore, this education programme embodies the paradoxal injunction to link critical thought training to moral and civic values. That is why our research project claims to understand the tensions between teenagers' media practices and the typical injunction of school institutions. We want to analyse the diversity of the teenagers' media practices (Cortesi and Gasser 2015) then, to compare the skills of media educators and teenagers.

Methodology & Results

These two studies are qualitative with ethnographic observations, comprehensive interviews, and focus groups. The first study took place in two middle schools over two years and the second study analysed education apparatus at schools and community centres.

Why ink these two studies? They share a starting point: the school does not recognize teenagers' digital practices. The information and media (Kervella and Loicq 2015) practices of teenagers are principaly viewed as risky, involving activities such as cyberstalking, copying/pasting, and resulting in students'inattention and radicalisation. Their inability to recognize cases of good practices in qualifying and judging knowledge or media discourse is one of the reason of this delegitimization. The analysed situations, in both studies, the settings mirrored issues related to the discourse policy at the school. On one side, when they do research on the Internet for schoolwork, students use what a school teaches them, implictly or explicitly, about knowledge scales and their "order of documents". How to select, index, hierarchize, or qualify information and their documents, is at the crossing between social norms about information and how we share information in social situations. On other side, the teenagers question the legitimacy of some media discourses and see the conflict between the school requirements and their media practices. If the school wants to restore lost trust in recognizing both the authority of books and the objectivity of mass media, the teenagers have abilities to negotiate and share informations and to have informed opinions, in spite of their difficulty in formalizing these skills. Itt seems appropriate to question the black box » of critical thinking training to build an information and media literacy programme by understanding that information's value is dynamic as a social process with power issues.

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Keywords: *information literacy, media literacy, informational practices, media practices, information value, discourses, teenagers, school*

Reading Format Behaviors among College Freshmen: Buy, Borrow, or Access Online?

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Many studies show that college students continue to express a preference for reading their academic texts in print rather than on electronic devices (examples: Baron, 2015; Mizrachi, et.al, 2016). This paper presents results from an investigation into students' actual behaviors in a reading intensive course when given the option of accessing and reading their texts for free online, or in print through the library course-reserve service, or through the purchase of the print readings, or any combination thereof. It also looks for relationships between individuals' behaviors and their academic success.

Two hundred freshmen at a major U.S. university were enrolled in a course exploring world myths and their role in intellectual thought. During the ten-week quarter, they were assigned over 1,000 pages of readings including the Iliad, Odyssey, Aeneid, and material on the context of the literature. Readings were made available through the course website and in print at the library and campus bookstore. Students could choose whichever format they preferred or mix them as desired. At the end of the quarter, they were surveyed about their reading format behaviors in this class. They were also asked for their SAT writing section score (a standardized test usually taken in high school for college admissions), and using their university identification numbers, their final grades were recorded.

Fifty-nine students completed the survey (30 percent response) and the majority (72.2 percent) replied that they read the required material "in print" or "mostly in print." Open comments echo sentiments expressed elsewhere – they prefer/learn better with print, print is expensive, and online reading causes headaches and eye fatigue. The average SAT score of the sample was far above the national average, and the average course grade for the sample was above that of the class average. However, no statistical correlations between behaviors and academic strengths were found.

Limits of this study include the relatively small and academically homogeneous sample, and the fact that the professors prohibited the use of electronic devices during the class lectures (not during the smaller discussion sessions). This may be why most purchased the readings, but not necessarily why they read them in print. This kind of study should be repeated using more diverse samples before conclusions are reached but it does add a new perspective to the question of students' format behaviors. A detailed discussion of this study was recently published in Reference Services Review (Mizrachi, 2016).

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Keywords: *print reading, electronic reading, academic reading, college students, learning styles*

Evidence of the Effectiveness of a Digital Tool to Guide Health Services Information Seeking in the Young

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Objectives

Health literacy is the capacity to seek and understand health information in order to make appropriate health decisions (Sørensen et al., 2012). Health service literacy (HSL) (Galanis et al., 2013) is one specific dimension of health literacy concerning knowledge and consequential access and utilization of health care (Paasche-Orlow & Wolf, 2007). In the digital age, information on health services is easily accessible, but young people find it difficult to navigate multiple choices and proficiently seek information to increase their knowledge of health services (Jain & Bickham, 2014). University students feel lost in the online information overload, facing for the first time the necessity to find a health service on their own (Cline & Haynes, 2001), and need guidance in the identification of youth-friendly health services. By means of digital tools, networks of support like university staff and health care professionals can play an important role in helping students with online information seeking (Eynon & Malmberg, 2012), thus enhancing their HSL.

Methodology

We produced a digital information tool in the form of an interactive map displaying 88 youth-friendly health services in the Bordeaux area (France), selected by a pool of researchers and healthcare providers, with detailed information on opening time, staff, service offer, and costs. In November 2016, the hyperlink to the map was sent by e-mail to 1300 students aged 18-30 years living in Bordeaux and participating in a large cohort of students (i-Share, www.i-Share.fr): 319 students empirically tested the map navigating its services, and 73 of them answered an online satisfaction questionnaire on their HSL before and after the use of the map. Descriptive statistics were performed including data on sociodemographic characteristics, health status and services utilization.

Outcomes

More than half of all students testing the map (187/315, 60%) reported no prior knowledge of youth-friendly health services in Bordeaux. Almost all students answering the satisfaction questionnaire (62/73, 85%) declared having obtained clear information on either new services or services they partially knew. All 73 students felt reassured by the fact that information on displayed health services was recommended by experts. Findings suggest that digital tools have the potential to increase young people's HSL provided that the information sought is trustworthy. Building the capacity of young people to seek information on health services can contribute to their HSL and, in consequence, their general health literacy, thus improving their access to care (Harper, 2014) by reducing the risk of making health decisions on the basis of noncredible information (Ivanitskaya et al., 2006).

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Keywords: *health information seeking, health system literacy, digital information tool*

Dare to Share the Silence: Tools & Practices of Contemplative Pedagogy in a Library Brain Booth

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Objectives

This research study aims to identify college student interest in mindfulness and contemplation practices as well as identify awareness of contemplative pedagogy in the workplace for educators, including librarians. Contemplative pedagogy serves to help students improve study skills and knowledge retention through mindful practice (Hassed, 2015; Olson, 2014). Scholarly literature supports mindful practices, such as intentional brain breaks, emotional self-regulation, and singular focus (Grossman et al., 2004). Contemplative pedagogy and mindfulness practices were introduced to students in the library through a new innovative project entitled, The Library Brain Booth. The Library Brain Booth was made possible through the financial support of the Sponsored Programs Foundation at Humboldt State and was created to situate mindfulness and metacognitive learning as central to academic success and within the Library setting. Based on the literature the following activities and tools were chosen both with regard to their accessibility and potential popularity: biofeedback, color-relax, game-relax, light-relax, read-relax, silent-relax, sound-relax, audio-meditate, prompt-meditate, video-meditate, gratitude-express, and virtual reality-immerse (Marchant, 2016).

Methodology

The Library Brain Booth was initiated as a voluntary, hands-on experiential lab for four hours weekly throughout fall 2016. Activities and tools were grouped into stations, but participants could alter the configuration at anytime. Two alternating Library room locations were chosen for their differing geographic locations, foot traffic patterns, and furniture configurations. An observational ethnographic study was undertaken. The qualitative observational data collected included photographs and video recordings. Student artifacts in the form of unsolicited written feedback and solicited writing-based activities were also collected. The observational study did not collect identifying information to protect participant anonymity. The researchers were non-participating and stationed outside of the Library Brain Booth to insure informed consent and answer questions. Observational research was conducted across several criteria as follows: total number of visits to the Library Brain Booth as well as repeated visits by students, staff, faculty, and community members; use of each station and the duration of use; and interactions among Library Brain Booth participants in the classrooms.

Outcomes

Our results report on high interest among college students for this innovative approach. Mindfulness tools and contemplative pedagogy help to foster focused reflection and cultivating patience. These are also tenets of the information literacy process and instruction. This research study provides evidence to support educators' use of contemplative pedagogy and its value in the information literacy workplace. We are developing a follow-up study based on the unsolicited testimonials that we have received from a number of students sharing their experience in how it affected their study performance and quality of their academic work.

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Keywords: *contemplative pedagogy, contemplative studies, academic libraries, information literacy, mindfulness, undergraduate students*

Content of Information Literacy in South African Higher Education Institutions: a Case of the University of Fort Hare and Rhodes University

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This study investigated the content of information literacy in South African Institutions of Higher learning in general and in particular, the University of Fort Hare and Rhodes University. The main aim of this study was to analyse the content of information literacy programmes and their contribution to students' academic success. With this broad aim, the study sought to fulfil the following objectives: to find out aspects of and instruction methods which were covered in the information literacy programmes at both Rhodes University and the University of Fort Hare; to determine perceptions of students on the contribution of information literacy instruction to superior academic performance; and, to identify constraints which impinged on information literacy instruction best practices and suggest content that may inform policy formulation on information literacy programmes in South African institutions of higher learning. To help the researcher interpret the results better, models such as the Big6, the new liberal art and the information literacy model were discussed. The study employed a survey research methodology and used interviews, questionnaires and content analysis to gather data. Interviews were conducted with a sample of 10 Instruction Librarians selected from both Rhodes University and the University of Fort Hare using purposive sampling technique. In addition, self-administered questionnaires were distributed to a sample of 387 participants obtained using quota sampling of the students from the two universities. Content analysis of both Rhodes University and the University of Fort Hare webpages was conducted focusing on aspects of information literacy. The findings include that Rhodes University and the University of Fort Hare information literacy programmes' content covered aspects which were mostly used in the developed countries. There was however, lack of collaboration among the key stakeholders of librarians, faculty and administrators with regards to the development of information literacy course content. The study further revealed that there were no clear policies to cater for the provision of information literacy at the university. Despite these major setbacks, the study revealed that the students to some extent, found the information literacy programme content very useful to their studies. Based on the findings of the study, the researcher recommended that librarians, faculty and administrators should collaborate on the development and delivery of information literacy programme content. It was also recommended that Rhodes University and the University of Fort Hare should develop information literacy programmes that cater for the needs of local students rather than adopting standards used in the developed world which may not be suitable for the local environment and culture. The study further recommended that Rhodes University and the University of Fort Hare should develop institution-wide policies on the development and delivery of information literacy skills with a view to make the programmes more effective.

Keywords: *information literacy content, academic performance, students, academic libraries, South Africa*

A Model of Collaboration Building between Teaching Faculty and Librarians at Earlham College in the United States: Viewed from Educational Development and Relationship Marketing

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In order that undergraduates build a foundation of workplace information literacy (IL) for their future, colleges and universities have considered IL as part of graduate attributes. Librarians had opportunities to join in a discussion group about IL initiatives, and approached teaching faculty and curriculum committees so that information literacy instruction (ILI) could be integrated into their instructional and curriculum design. In the context of these educational reforms, a constructive relationship between teaching faculty and librarians should be recognised (Julien & Pecoskie, 2009; Shane, 2004). There are a large number of "how-we-done-it-good" reports of ILI projects done in collaboration with teaching faculty (Phelps et al., 2012). However, most studies did not focus on analyses of teaching faculty-librarian relationships themselves, and few explained those relationships in terms of conceptual or theoretical frameworks. The purpose of this paper is to explain collaboration building between teaching faculty and librarians in university education from the viewpoints of conceptual and theoretical frameworks.

There is a grounded theory on collaboration building between teaching faculty and librarians in education, which was constructed based on a case study of Earlham College in the United States. Earlham College was selected as a benchmark because the Library has provided course-related instruction in collaboration with teaching faculty since the 1960s and its practices have influenced many college and university libraries in the United States. The grounded theory consists of categories including strategic approaches and intervening conditions. For categories of strategic approaches, "customised ILI", "instructional support for teaching faculty" and "interpersonal communications" were discovered. On intervening conditions, "leadership of library directors", "librarians as instructors", "librarians' faculty status", "small community", "flat hierarchy" and "teaching faculty as educators" were revealed (Nagasawa, 2017).

As an interpretive case study, this paper made conceptual and theoretical analyses of the above grounded theory. Categories of strategic approaches were analysed based on conceptual frameworks such as partnership models (Bruce, 2001) and a collaboration model (Black et al., 2001). Categories of intervening conditions were analysed based on conceptual frameworks such as internal/external factors (Shane, 2004) and unequal power relationships (Julien & Pecoskie, 2009). In addition to these conceptual frameworks extracted from studies in Library and Information Science, the grounded theory was explained in terms of educational development and relationship marketing. As a result of the analysis, librarians' approaches at Earlham College were located in a part of instructional development which was concerned with enhancing course design to support student learning, and considered as relationship marketing in order to build cordial, sustainable and stable relationships with teaching faculty for successful ILI.

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Keywords: *faculty-librarian relationships, collaboration, information literacy instruction, grounded theory, educational development, relationship marketing, Earlham College*

The Pedagogy of Information Literacy: Using I-LEARN to Teach

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Since 2012, our research team has conducted a series of studies in elementary and middle schools in Philadelphia (e.g., Lee, Tecce DeCarlo, Grant, & Neuman, 2016) to validate the I-LEARN model (Neuman, 2011) and to understand its strengths and weaknesses as a tool for teaching the full spectrum of information literacy:

- I: Identifying a researchable question
- L: locating information to answer it
- E: evaluating the information
- A: applying the information to create a product that demonstrates learning
- R: reflecting on the process and product of the work
- N: using the newly acquired kNowledge to explore new questions or topics.

The **objectives** of this paper are to present the strategies and methods teachers used to teach the stages of the model and to identify both strengths and gaps in those approaches. All the studies have used primarily **qualitative methods –** observations, focus-group interviews, and analysis of students' products – to identify teachers' ideas and practices. The **outcomes** of the presentation will include research-based insights into the salient issues that surround creating a "pedagogy of information literacy" specifically related to the I-LEARN model.

Insights that have emerged from our research can be categorized according to the stages of the model:

- I: Students' environments strongly influence the questions they ask, and older students are skilled in targeting important issues; all students generally need guidance in formulating researchable questions.
- L: Both students and teachers need guidance to enable them to locate credible, reliable sources.
- E: Both students and teachers need guidance in determining how to evaluate sources and information.
- A: Teachers are adept at helping students envision products that demonstrate their learning, but both students and teachers need guidance to use digital technology to create high-quality products
- R: Reflection is an underused stage, probably because of time constraints, and both teachers and students need guidance in understanding its importance.
- N: Students are generally adept at expressing their views, but it is difficult to determine the depth and breadth of knowledge acquired as a result of information seeking.

Overall, our research suggests that teachers with library training are needed to help students become truly information literate. Librarians have the information-seeking skills for addressing the first three stages of I-LEARN, while teachers have the understanding of teaching and learning necessary for the final three. Neither group alone, however, has all the skills necessary to guide students to achieve information literacy. The emerging field of "digital literacy teacher" provides a model for addressing the existing gap.

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Keywords: *I-LEARN, pedagogy, teaching, learning*

The Impact of Creativity on Information Literacy Instruction

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The author has been researching and reflecting on the importance of creativity in enhancing the information literacy classroom, particularly in the context of an academic library. The author approaches research with an increasing interest in exploring creativity as part of the new ACRL Framework and the way the creative information literacy component fits into the holistic approach of a changing, more engaging curriculum on college campuses. Recently, the author conducted a research study that explored the role of creativity in information literacy.

This paper will:

1. reflect the conceptual structure for thinking about approaching and implementing creativity in an information literacy classroom;
2. briefly introduce examples, evidence and artifacts from experience in working with undergraduate and graduate courses in the arts and humanities as a platform for further thinking about information literacy and for informing the research study;
3. introduce results of a study conducted during 2016 that will advance our understanding of how academic librarians define and perceive creativity, and whether the implementation of creativity as it aligns with opportunities in the new ACRL Framework actually improves academic learning.

The study used a survey that first explored the definition of creativity. The study also explored the extent to which creativity is being employed as part of academic library practice. For those who are utilizing creativity and play as part of their library instruction, the survey examined the impact this practice has on student learning. The research questions that grounded the survey include: How does creativity fit into the new ACRL Framework? How does creativity (defined by play, and critical, reflective, contemplative pedagogy) impact student learning as it relates to information literacy? How does creativity in the classroom change the kind of teaching/learning the library provides? Does creativity in the classroom transform the library experience, and does it engage students in the research and learning process?

By examining the impact of library instruction on various formats of student learning, this paper will reflect on the definition of creativity, how it is implemented in the library classroom, and the results of a recent research study that outline next steps and opportunities. The author will discuss the broad themes that were the result of the study, which include creative teaching, creativity in learning, the role of the library in promoting creativity, and barriers in connecting creativity to the framework. Results of the study will further reveal specific obstacles to incorporating creativity into information literacy instruction. These include limited time spent with students, few opportunities to be "creative" in the classroom, a need for more pedagogical training, and a need for more "meaningful" collaboration to employ creative techniques in the classroom. The author will also outline specific bright spots from the results that corroborate a need for more creativity in library instruction. Finally, the author will discuss next steps for conducting further research on creativity in information literacy. The aim will be to conduct a qualitative study to garner more specific feedback.

Keywords: *information literacy, reflective pedagogy, creativity, arts, ACRL Framework*

Understanding the Academic Library as an Information Literacy Workplace

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Library spaces are being redesigned to address transformative changes in ways information is sought and students learn. Emphasis on providing convenient destinations to retrieve information resources is shifting to creating informal learning environments, including spaces for the collaborative and individual work of studying as well as opportunities to meet with experts to guide navigation of increasingly complex information landscapes. Approaching information literacy as a socially enacted practice within a specific setting offers a framework to design and evaluate ways academic library spaces are being redesigned. The purpose of this presentation is to integrate a person-in-place perspective of information literacy with the author's exploration of factors relating physical space to learning and efforts using different assessment methods to measure learning behaviors in library spaces. Librarians, designers, architects, researchers and students interested in using data to make decisions about space design will be interested in the results of this work.

Lloyd posits information literacy is not only a set of information skills applied to accessing information in textual or digital forms, but is a socially enacted practice. "Information literacy practice is constituted by the whole person being in, and experiencing, the setting in relation to the formal and informal rules and shared practical understandings" (2012). This perspective resonates in understanding the concept of workplace information literacy that includes an individual's ability to access and engage with a range of situated information sources that affect forming both meaning about collective practice and personal identity (2006). Applying this framework to performance of information literacy training in a library adds purpose to the physical space as an intentional workplace for learners to transition from acting as students to becoming life-long learners.

Qualitative ethnographic methods characterize assessments relating built spaces and learning in informal learning settings, such as libraries. Methods include inventories of the content and configurations of spaces, observations and counts of activities within learning environments, satisfaction surveys, and self-reported perceptions of impact of use of space on academic success. Three innovative approaches to gather evidence about the association of learning with library spaces are described. These include visual recording of places students identify and evaluate as learning environments, content analysis of language used to describe library spaces (Nitecki & Simpson 2016), and analysis of pixel patterns from video recordings of student active learning behaviors (Johnson et al 2015). Presentation suggests evidence from these studies supports the construct that a library is a workplace for performance of information literacy as social enacted practice that ultimately results in membership in the community of life-long learners.

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Keywords: *information literacy workspace, informal learning space, library*

The Pulse of the "Heart of the University": Exploring Higher Education Teacher–Librarian Partnership

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While recognizing the role of a library within the university, often called the "heart of the university," this study focuses on the higher education teacher-librarian partnership. We are interested in the ways in which higher education strategies, policies and other relevant conditions are influencing and impacting this partnership. The aim of this study was to determine how higher education teachers and librarians at two Croatian faculties perceive their libraries and their role in teaching and researching. More specifically, the study explored the modes of cooperation between higher education teachers and librarians regarding curriculum development and actual librarian involvement in the teaching process as the possible sphere of partnership viewed by several authors is collection development, information literacy courses and library services (Yousef, 2010; Coltrain, 2016). In this paper we posed the following research questions: In what ways do the existing higher education strategies, policies and other relevant conditions influence the higher education teacher and librarian partnership? How do higher education teachers and librarians perceive their libraries and their role in teaching and researching? The methodological framework used was comparative case study, as it involves the analysis and synthesis of the similarities, differences and patterns across two cases attempting to produce more generalizable knowledge about causal questions (Goodrick, 2014). In order to gain a deeper understanding of the cases and case contexts, multiple data collection methods were used including interviews six higher education teachers and four librarians from two faculties) and document analysis. Changing patterns in higher education teacher-librarian partnership may rely on information literacy, not just as a possible course but as a basis for improving attitudes while also building a respectful, meaningful collaborative learning environment for all students and employees. Hence, the research findings contribute to the further development of the role of the academic librarians in today's universities. As Munde and Marks (2009) stress "if libraries do not assess and report their contributions toward faculty success, and instead direct their findings toward improvements in collections and services, they run the risk of being viewed as general utilities within their institutions – perhaps no more than a convenience or amenity in the minds of administrators, faculty, and librarians themselves" (p. 111). Our research attempts to explore how to make meaningful connections between librarians and higher education teachers to build a more fruitful, collaborative, productive relationship.

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Keywords: *higher education teacher-librarian partnership, emancipatory pedagogy, academic libraries, higher education policy*

Defining Multilingual Information Literacy (MLIL) in the Workplace: Implications for Academic Libraries in the US and Canada

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This paper will provide a working definition of Multilingual Information Literacy (MLIL) and offer some practical implications on how it could be promoted and fostered in academic libraries. Drawing from the results of a study that was carried out at a Canadian higher institution as well as current practices of the author as a reference and instruction librarian, the paper will discuss multiculturalism in the context of academic libraries, and specifically how multilingual information literacy can be promoted and facilitated in this context.

Purpose

The aim of the study was to propose a framework for providing information literacy instruction to Limited English Proficient (LEP) users. In the case of academic libraries in the United States and Canada, these were mainly international and ESL students. The study also sought to provide a working definition of Multilingual Information Literacy (MLIL).

Design/methodology/approach

Building on two earlier phases of a study that explored linguistic determinants in the online searching behaviour of international and ESL students, this phase of the study used a qualitative research approach that employed focus group discussions and semi- structured interviews. Nineteen international and ESL students participated in the focus group discussions. The discussions focused on language and how it affects their information literacy skills. Eight librarians were interviewed to find out their perspectives regarding information literacy instruction; they were also asked to share any language related issues or incidences they had encountered while providing reference and instructional services especially to non-native English speakers.

Findings

Language related issues were the focus in the group discussions with students while in the librarian interviews the focus was mainly on information literacy. Fifty-six percent of the students were aware of information literacy instruction as a service that was offered by the university library. However, only 34 percent had attended an information literacy instruction session. Only one of the librarians had offered an information literacy instruction session that specifically addressed or at least acknowledged the language related needs of the students.

Originality/value

This paper provides a working definition of multilingual information literacy, and proposes Specialized Information Literacy Instruction (SILI), Personalized Information Literacy Instruction (PILI) and collaborations with teaching faculty as effective strategies for providing information literacy instruction to multicultural student populations.

Theoretical Implications

The paper provides a working definition of multilingual information literacy, and suggests two models for providing information literacy instruction to bi/multilingual users, in particular limited English proficient users.

Practical Implications

The paper provides some practical steps that academic librarians could take in promoting and enhancing multilingual information literacy in the workplace.

Keywords: *multilingual information literacy, multiculturalism, limited english proficient users, specialized information literacy instruction, personalized information literacy instruction, focus group discussions, interviews*

Information Literacy Dimensions in a Consortium-Type Structure: Train the Trainer in National Projects from Romanian Academic Environment

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Introduction

Since 2013, the academic and research community in Romania has been connected to high quality scientific literature through the project "Assuring national electronic access to scientific literature for supporting and promoting the research and educational system in Romania", developed by the Association Anelis Plus. The IL instruction objectives developed by this project were: initiatives aimed at the scientific community from universities and institutes: developing the Train the trainer Program and launching the program for increasing the number of Romanian scientific papers published at international publishing houses; initiatives concerning Romanian publishers of scientific journals that have as goal increasing the number of such journals indexed in databases. The project will continue over the next 5 years (Anelis Plus 2020) The program Train the Trainer will consist in forming a core of specialists, capable of instructing end users in their own institution. Other specialists who will develop and maintain an institutional repository in OA in their own institutions will be also trained.

Methodology

The impact of the IL instruction was analyzed from the results of a national survey. The online questionnaire was completed by *Anelis Plus* members' representatives. Throughout this study, the level of satisfaction of beneficiaries was evaluated, including the *Train the Trainer* program. Also, there have been requests for suggestions from members concerning its improvement, and their opinions on the proposed program directions.

Summary or Major Findings

Results of the study show that over 90 percent of the respondents consider the Train the Trainer project useful and they agree that their institution should be involved in its development; at the same time, better promotion is needed. In this paper, the important role that LIS specialists involved in this project played in the users' education is revealed. The role of the services with added value offered by a library will also gain importance: IL, scientific data management, and assistance throughout the research cycle. In this context, we can acknowledge that the activities conducted contributed to the development of the research capacities, as well as to the integration of the Romanian RDI system in the international scientific environment. IL instruction contributed to promoting ER and the development of specific methods for sustaining the research and the academic community's work.

Conclusion

The paper emphasizes the crucial role of the training program in the Romanian academic community, the first of its kind expanded nationwide. This study also aims to increase awareness about the importance of IL instruction and LIS specialists in guiding the next generation of researchers.

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Keywords: *electronic scientific resources, national repository, train the trainer, open access, RDI system*

ICT Access and Use by Teachers and Information Professionals: Perspectives and Constraints for the Development of Media and Information Literacy in Brazil

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Introduction

Although it involves other important dimensions, the concept of media and information literacy (MIL), adopted by UNESCO (2015), places a strong emphasis on access and diversified use of information and communication technology (ICT). MIL is presented as a means to overcome digital and social inequality and promote empowerment of groups and communities. Another characteristic of the MIL approach is the specification of professional categories that should be considered in the promotion of MIL. This key professional group includes workers involved in formal and informal education as teachers, librarians, and other categories of workers in libraries and museums. In order to understand the present perspectives of MIL in specific countries, it is important to deepen our knowledge about access and use of ICT by these professionals.

Objectives and Data

Does Brazil have a favorable perspective for the promotion of MIL? Does it have adequate human resources with the suitable technological infrastructure for this task? What are the contextual and sociocultural characteristics that help to explain ICT availability and use by these professionals in the country? The objective of this paper is to analyze access and use of ICT resources in Brazil by the above mentioned professional groups in order to contribute to the answers for these questions. The data used in the analyses of the study are obtained from a national survey of the Brazilian Bureau of Census - IBGE/PNAD (2015). This survey involved a representative sample of the Brazilian population containing information about its general socioeconomic characteristics. We analyzed the 2015 survey, which involved 356,904 people and 1,100 municipalities. We considered two groups of variables about the professional group selected for the analyses. The first group referred to variables that seek to identify ICT availability and use of several different ICT resources - computer, mobile phone, tablet, TV – and internet use with each of these resources. The second group of variables tried to measure sociocultural and contextual characteristics of the interviewee such as educational level, age group, gender, and geographic region.

Methodology and Outcomes

The analytic model utilized in the analyses focuses and tries to explain types of ICT availability and use, relying on the contextual and sociocultural characteristics of the professionals included in the analyses. The analyses involve dthe presentation of univariate, bivariate, and multivariate tables and graphs as well as statistical measures. Initially, we considered the situation of ICT access and use in Brazil in general and by the professionals mentioned above. The analyses also took into account the relationship between the sociocultural environment of these professionals – education, age, gender and regional characteristics – and ICT access and use.

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Keywords: *media and information literacy, information professionals, ICT access and use, Brazil, IBGE*

Workplace Information Literacy Needs: More than the Ability to Google

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The purpose of this paper is to raise awareness of the need for a re-conceptualisation of workplace information literacy needs in order to take into account responsibilities to create, capture and manage information and data for multiple purposes (including accountability) and to be able to ensure that information and data are available and can be accessed into the future, for legally, operationally or socially mandated periods of time.

A three-level model for the analysis of information culture in the workplace has been developed (Oliver and Foscarini, 2014). The middle layer of this model focuses attention on information management skills which are required by all actors in the workplace. Existing models of information literacy generally focus attention on information seeking, retrieval and evaluation skills, but the information culture model raises awareness of the need to consider the special requirements to manage information as evidence, for accountability purposes. A parallel concern relates to sustainability issues for information created and managed in digital environments.

These two information related competencies are associated with the professional missions of records managers and archivists but are generally poorly understood or even recognised by those outside this specialist disciplinary area. Most people are very familiar with the concept of libraries whereas archives are not so well known. Understanding of the purpose and mission of archives to preserve records of permanent value over time, the significance of context as opposed to content, may be only partially grasped even by fellow information professionals. Consequently, awareness of the need for these general information competencies may be overlooked entirely.

The International Standard on Records Management (International Organization for Standardisation, 2016) specifies that personnel responsible for the creation, capture and management of records (which will include most employees in an organisation) must have the required competencies to do so and that relevant training should be ongoing. However, for many people, recordkeeping requirements are likely to be unfamiliar and unexpected, and may be perceived as an unnecessary additional burden that makes achieving their primary work objectives more difficult. The absence of any prior exposure to records and recordkeeping poses significant risk to the successful achievement of training outcomes.

One potential strategy to address this lack of knowledge and understanding is to raise awareness of recordkeeping and digital sustainability issues before employment, during the educational process. The association of information literacy with the professional identity of librarians (Addison and Meyers, 2013) suggests that recordkeeping aspects may not be routinely recognised or taken into account in school or university settings. As a first step in developing this emerging research topic, data relating to the content of information literacy courses offered at undergraduate level worldwide will be collected and analysed.

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Keywords: *accountability, records, information culture, workplace*

Media Information Literacy and Media Didactics of Street Art

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Media informational literacy is characterized as the ability to analyze and synthesize media reality or the ability to "read" mediatexts. Recently, this concept was considered reliant on "traditional" means of mass communication, presented in the concept of "journalism". Today, however, the concept of "mass communication" has significantly expanded its limits. Thus, the concept of "media education" is broader than the concept of "journalism". As far back as 1984 UNESCO defined the essence of media education as teaching theory and practical skills to master modern means of mass communication. Since then, media education is viewed as a part of a specific and autonomous branch of knowledge in educational theory and practice. The direction of media in the cultural and educational process has gained in popularity. Today, the term "mediatext" is regarded not only in the context of products produced by journalists. It is combined with all objects or phenomena that contain important information for us, enrich us with new knowledge, encourage us to gain knowledge, and/or serve as a source base for communication. We get used to the concepts that are outside of journalism and consider city, architecture, landscape, and so on as mediatexts. Visual communication of the twentieth century comee in almost all spheres of culture and is referred to in actualized concepts such as visual text, visual language, visual culture. Visual communication has become a natural part of the modern media. Street Art as a form of visual communication media is now being recognized. Among the varieties of mass communication, the practice and appreciation of Street Art is now booming. – Street Art is a kind of fine art with a distinct urban style. New forms of media became an increasingly popular tool for street artists. Street Art includes many techniques and materials. Painting on architectural structures and other stationary buildings needs attention, study, and comments. This communication uses colours, artistic images and, verbal language to create mediatexts by means of visual language. It is advisable to consider the relatively new phenomena - Street Art and Mural Art - from the standpoint of media education in order to further understanding of the capabilities of Street Art didactics and Muralodidaktics. Wall Art can be included in educational work. Street Art as text or simple signs became known in the second half of the 20th century. Much of modern Street Art has origins in New York which, in 1960-1980, experienced the so-called graffiti boom. New York still continues to be Street Art that attracts artists from all around the world. One of the biggest graffiti cities in Europe is London. Artists used the Berlin Wall as their backdrop from 1961-1989 (1986). Street Art in Greece developed from the late 1980s and gained major momentum in Athens. Street Art developed in the Spanish cities of Madrid, Barcelona, Valencia, and Zaragoza. Italy has been very active in the field of Street Art from the late 1990s. The capital of Street Art is Yekaterinburg and interesting works can be found in St. Petersburg. In Ukraine, most of street images are in Kyiv. Here, murals have become a visual feature of the capital of Ukraine and have a chance to be considered the new landmark. Sergei Hryshkevych from Kyiv created an interactive Google-map, where all murals in Kyiv are shown [http://hmarochos.kiev.ua/2015/12/02/ stvoreno-mapu-novih-kiyivskih-muraliv/]. The Google-map clearly shows where they are located in Kyiv and how artists from the Ukraine, Spain, Argentina, Australia, Germany, Britain, and Portugal decorated the capital. Http://www.theinsider.ua/infographics/2014/ murals2015/. Using this address, you can view the project, "Rock art of Kyiv", that introduces and points out 28 monumental Murals in the capital and identifies their location and addes comments, information about their creators' authors, and the history of creation. Even a cursory review of the collection shows the variety of topics, art schools, and worldviews of artists who created the modern "rock" images in the capital of Ukraine. Not so long ago in Kyiv, a new tourist route for walks appeared, said DreamKyiv [http://dreamkyiv.com/u-kyyevi-z-yavyvsya-novyj-turystychnyj-marshrut/]. It is connected with Street Art. In Ukrainian cities, one can meet nontypical images of Street Art. For example, Street Art includes images created by weaving ribbons on metal rabbitfences; houses with vintage photos; window openings where historical monuments were frames for Ukraine vintage photographs; an art handrail with quotations of young Ukrainian writers and poets; benches made of pencils; and eyes drawn on trees to draw attention to the preservation of nature. We have every reason to say that Mural didactics and Street art didactics are means of mass communication that takes different forms. The Mediacontext of Street Art finds its fans and will be one of the most interesting and promising areas of modern educational space. Through Street Art we will learn to read the figurative language of the modern city.

Keywords: *media information literacy, street art, mediaeducation, mediadidactics, mural didactics*

Senior Citizens Science Literacy and Health Self-Efficacy

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Objectives

The importance of communicating scientific knowledge about health-related issues, and the enhancement of science literacy among the public, has been generally recognized. By increasing public understanding of this it is hoped that people can be helped to make sound choices about their health. This is not a simple task however, nor have efforts at building people's capacity always been effective. Among the factors that have been identified, is people's beliefs and attitudes toward health issues. Social cognitive factors could play a role in this respect. Bandura (1997) has pointed out that there is a distinction between obtaining information and acting on it, and has put emphasis on the importance of perceived self-efficacy as a cognitive mediator of action. Self-efficacy beliefs are people's expectations about whether or not they will be able to master a behaviour, and if so, how successful they will be (Bandura, 1997). The aim of the study is to examine the health self-efficacy of people at the age 60 years and older in Iceland. The paper will seek answers to the following questions: 1) How do senior citizens perceive their health self-efficacy? 2) How does the perceived health self-efficacy of the senior citizens' age groups, sex and education relate to their perceived health self-efficacy?

Methodology

The data was collected in spring 2012, using a random sample of 1200 people each, aged 18 years and older from the whole country. Total response rate was 58.4%. The current study involves only people who are 60 years and older. Total participants were 176 - 86 women and 90 men. They were divided in two age groups, participants 60 to 67 years totaled 87, while 89 participants were 68 years or older. The measurement instrument consisted of three sections: 1) Traditional background variables; 2) Age groups. 3) Health self-efficacy, using the Perceived Health Competence Scale (PHCS). This is an 8-item scale referring to both outcome expectancies and behavioural expectancies. Each question has a 5-point response scale (1 = Strongly agree – 5 = Strongly disagree). ANOVA (one-way) was performed to examine difference across the age groups for each statement of the PHCS scale. To examine the effects of sex and education, and how it interacts on the age groups health self-efficacy, factorial analysis of variance (FANOVA) was used.

Outcomes

The study found that the participants did not differ in their self-efficacy beliefs by age groups and suggest that they believe in their health competence. However, a closer examination revealed that the participants self-efficacy scores differed by education, and that in the younger age group, those with less education did not belief as strongly in their health competence as participants with a higher level of education. The paper will discuss the implications of the findings for the advancement of science literacy among senior citizens.

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Keywords: *health self-efficacy, science literacy, senior citizens*

Data Literacy and Attitudes Towards the Management and Sharing of Research Data Among Academics and Doctoral Students at the University of Iceland

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Objectives

Data literacy and data management have received growing attention in the past years. As research funders have started to put emphasis on the valuables of research data and the possibility of reusing it, open access to research data and data sharing plans have become a focus point (Haendel, Vasilevsky & Wirz, 2012; Koltay, 2015; Martin, 2014). Data sets are increasingly being considered part of the scholarly output and distributed as such (McMillan, 2014). This created new demands on researchers, who are faced with complex challenges that they have not dealt with previously. As a result, there is a growing interest among information specialists regarding how they can offer support to the research community to address these demands. The aim of the study is to investigate the data literacy, knowledge and attitude about data management and the sharing of data, among academics and doctoral students at the University of Iceland. To do so, answers to the following research question will be sought: 1) What characterises the data literacy of researchers and doctoral students? 2) What challenges are researchers and doctoral students facing regarding data sharing and data management?

Methodology

This is an international online survey conducted among researchers and doctoral students at the University of Iceland. The same questionnaire was used by all participating countries. The questionnaire was translated from English to Icelandic. The measurement instrument consisted of 26 questions in all. A total of 18 questions emphasized data literacy, awareness of data management issues, the extent of collaboration and sharing of research data and the researchers' attitude towards this. In addition, the questionnaire consisted of seven background questions, and one open question. The online system Lime Survey, which is an open source software, was used for data collection. Data collection started in February 2017 and is still ongoing.

Outcomes

Recognition of the academics and doctoral students' attitudes towards the issue of collaboration, data sharing, and data management, and the problems and challenges that they are facing, is critical in order to design relevant support for them. The study results may provide important understanding about the researchers' communities' data literacy and knowledge about data management. The findings can be used by universities to develop data management policies, as well as services that assist the research community.

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Keywords*: academics, data literacy, data management, data sharing, doctoral students*

Information Literacy across the University and Workplace Reality

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Introduction: IL and work-place

Information Literacy (IL) represents the ability to find, use, evaluate and communicate information. During the education period these skills are important. What happens after graduation? What happens in the workplace? If the workplace is not a university, library, or research institute what are the skills needed? These questions were investigated in a study in the first semester of the 2016-2017 academic year at Transilvania University of Brasov, Romania and at the Academy of Economical Science, Chisinau, Moldova.

Literature review

There is a lot of literature on Information Literacy (IL). However, an agreement that IL is important in the workplace has not offered much guidance to universities seeking to prepare their students for professional success. (OECD, 2013; Cyphert and Lyle, 2016; Quinn et al., 2014**).**

Objectives of these studies

What are the necessary skills to use information to open your own business and use government funds for financial support? Has the university developed critical thinking and provided information on sources of financing for development of one's own business? How satisfied were master students with IL skills? Graduates with a job or owning their own business were polled

Methodology

The differences between what employers expect of new employees and what the University perceives those expectations to be, were identified by using Survey Monkey, in the two universities.

Summary or major findings

The information necessary at the work-place to solve problems is professional field information and news, information about continuing education, as well as following legislation information in the field, and of projects and funding sources. Responses were surprisingly varied. Most were able to solve the problem. Most are happy that the university has developed critical thinking and given them available sources of information. Satisfaction levels on IL skills are 3.96 out of 5. They believe that IL skills increase the chances of getting a job and good salary.

The studies are original, performed for the first time in a university in Romania and Moldova, and may be used by companies and universities to identify the informational needs of graduates. The results can be a starting point for joint employer-university courses.

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Keywords: *university, information literacy, work-place, skills, employers, Romania, Moldova*

Identifying Good Practices in Information Literacy Education; Creating a Multi-Lingual, Multi-Cultural MOOC

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This presentation reports an analysis of good practices in information literacy (IL) education, with particular reference to practices which may be incorporated in the design of a Massive Open Online Course (MOOC). It is the first stage of an Erasmus+ project to create a MOOC for IL, with emphasis on multi-lingual and multi-cultural aspects, and on continual participant self-assessment.

The project partners are: Barcelona, Graz, Frankfurt (DIPF), Hildesheim, London (City), Ljubljana, and Zadar. The MOOC will focus on students in higher education, while being accessible to high-school students and to adults in lifelong-learning. It will be unique being be multi-lingual (English, German, Spanish, Catalan, Slovenian and Croatian), and reflecting both culturally distinct and language-specific issues in IL.

This presentation reports the first stage of the project, being carried out between January and May 2017. This is an analysis of current good practices in teaching and training for IL, which will guide the structure, content, nature of interaction, and pedagogical practices of the MOOC. Since the literature (published and unpublished) is extensive, and practice rapidly developing, particularly regarding technical solutions, the focus will be on materials created in the last five years, from 2012 or later, although particularly significant older material will also be included where appropriate. The aim is not to produce a comprehensive bibliography, but rather a selective list of resources (articles, chapters, reports, examples,) providing evidence of good practice: for MOOCs generally, with emphasis on multi-lingual and multicultural aspects; for IL learning, where it is relevant to the MOOC context; for technology-supported self-assessment.

The topics for which examples of good practice will be identified are: pedagogical framework; IL definitions and models; IL concepts and content (generic and specific); good practices in MOOC design and management; use of MOOCs for IL learning; structuring of course materials, and reusability of learning objects; multi-lingual and multi-cultural instruction; teaching and learning methods; interactivity in e-learning; self-assessment methods, especially technology-based; IL education for contexts other than students in higher education, especially lifelong learning.

The contexts in which good practice examples will be sought are: MOOCs for IL learning; MOOCS in general - focusing pedagogical aspects and multilingual instruction; curricula for IL learning, in formal education and otherwise; technology-assisted IL instruction, other than MOOCs, particularly widely-used online tutorials; other IL education and training resources, focusing on recent examples, especially with a multilingual/multicultural dimension. The examination of MOOCs for IL learning will be as comprehensive as possible; the other contexts will necessarily be examined selectively.

Good practices will be identified from: searching in internet search engines, bibliographic databases, educational curricula, journals, books and blogs devoted to IL; interviews of subject experts; and identification of unpublished, or locally published, good practice through the project team and their networks.

The results of the analysis will be available in time for inclusion in a full version of this presentation. Initial findings confirm the relative lack of consideration of self-assessment, and of inclusion of multi-lingual and multi-cultural material in IL training materials.

Keywords: *information literacy, education, good practices, MOOC, multi-lingual, multi-cultural*

Creating a Nation of Online Trainers: The Design for Learning (D4L) Model

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In its "Standards for Distance Learning Library Services," the Association of College & Research Libraries (ACRL) calls on libraries to provide information literacy (IL) to all students, including distance learners. How might librarians acquire skills to provide IL online?

In 2014, the South Central Regional Library Council (Ithaca, New York) partnered with Syracuse University's School of Information and the Empire State Library Network in submitting a successful three-year grant to the U.S. Institute of Museum and Library Services (IMLS) to support "Design for Learning (D4L): 21st Century Online Teaching and Learning Skills for Library Workers." The objectives of this paper are to present the structure and impact of D4L in responding to a skills gap among librarians.

Objectives of this paper are: 1. summarize the challenges and successes of D4L as one approach for helping librarians become online IL instructors; 2. introduce the structure of the D4L training, with key content areas in a series of modules for Foundation (Instructional Design), Diversity, Community, Content Creation, Course Management, and the final Capstone project; 3. describe the impact of D4L on participants and its potential impact on future users.

Our research question is: (RQ1): How might you develop free online training for librarians who wish to be effective online trainers?

We will close our paper with recommendations and D4L's plans for the future. The D4L modules have been revised based on input from the first two cohorts of students, and will become available for free online through WebJunction.org starting in May 2017.

We will study the D4L experience through multiple methods. First, we will summarize the results of a survey sent to the 180 individuals who enrolled in two separate cohorts during D4L's development. The survey gathered data on participant demographics (including library type and geographic location), their motivation for participating in D4L, their assessment of the modules in terms of perceived benefit, the extent to which they found D4L helpful, their questions about online teaching and learning, and their recommendations for future expansion of D4L. In addition, we will describe selected completed Capstones as individual case studies. We will conduct a content analyses of the comments left by cohort members in the online forums, notes from live meetups, and through the D4L social media, including its Facebook page. In addition, we will review analytics of student participation in the Moodle learning management system for the program, along with transcripts of the regular meetings of the D4L team and reports from the project evaluator.

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Keywords: *design for learning, D4L, information literacy, librarian as educator, trainers*

Data Literacy and Research Data Management at the University of Vilnius

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The growing role of media and information providers in society offer new possibilities for social, economic and political development. This growth will enable us to take advantage of developments and to tackle the challenges of increasing flow of information and media content created and shared using new information and communication technologies (ICTs). Nowadays there is a need for a new approach to literacy that is more situational, pluralistic, and dynamic. Furthermore, it is commonly agreed that countries need to invest in the creation of an enabling environment, as well as to develop a new set of critical competencies for thier citizens including skills, knowledge, and attitude. The UNESCO Global MIL Assessment Framework enables member states to carry out comprehensive assessments of the information and media environment. The Assessment Framework also allows for monitoring the extent to which citizens, especially teachers in service and training, have acquired MIL competencies, at the national level (UNESCO Global MIL Assessment Framework, 2016). From this point of view, it is highly important to analyze the level and awareness of data literacy and research data management in the higher education sector and to especially target academics and researchers.

The *purpose* of the paper is to identify and investigate the research data literacy of academics, researchers, and doctoral students. The site for this research is the University of Vilnius in Lithuania. University of Vilnius is a state university, one of the leading universities in Lithuania. It has 12 faculties, 7 institutes and 4 study and research centers, nearly 21 thousand students, and 2,500 full-time academic staff, professors, docents, and research fellows.

Respondents

Academics and doctoral students at the University of Vilnius are the target group for this research. A survey *method* is used, asking respondents to complete an online survey instrument, *Data Literacy and Research Data Management, through the LimeSurvey* online platform. The survey instrument was prepared by an international group of researchers under direction of Professor Serap Kurbanoğlu (Hacetteppe University, Ankara, Turkey) and Professor Joumana Boustany (Paris Descartes University, France). The survey instrument consists from 24 questions, arranged into two groups – awareness of data management issues and demographic information.

Results

Research is performed at the University of Vilnius during the period of February-April, 2017. The results are analyzed seeking to find out current levels of awareness and gaps in knowledge of data literacy of higher education community. The results and outcomes of the research will influence our understanding of data literacy of academic staff in higher education sector. They will be used for identifying peculiarities of information behavior of academics and researchers enabling appropriate arrangement and development of their further research competencies and skills and to contribute to the higher quality of the research production and quality of studies in higher education sector.

The research is part of multinational study for Data Literacy and Research Data Management performed by international group of researchers to conduct an international comparative analysis.

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Keywords: *information literacy, data literacy, research data management, University of Vilnius*

Problems of Information Literacy Education in Universities. The Experience of Bulgaria

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Information literacy (IL) education at the university level is an essential part of the overall education strategy in the field of library and information science in Bulgaria. Since the mid-1950s, the country has had a long-standing practice of preparing students for working with information sources, formerly referred to as library and bibliographic sources. At the beginning of the 21st century, IL began to be covered through a series of lectures in library and information science education. The aim of this paper is to outline the details of university education in the field of IL in Bulgaria. The paper illustrates the coexistence of successes and serious unresolved problems in higher education. The study of IL occupies an important place in the bachelor's, master's and PhD programs at the three universities that provide library and information education in Bulgaria: the SULSIT, the Sofia University, and the University of Veliko Tarnovo. The courses are structured to cover content on: Information activities of libraries; Technology and techniques of service and types of information sources; Services to different population groups and the related differentiation of these groups; and Methods for testing the level of IL and the needs and interests of different groups of users. The course is based on the experiences oflibrary professionals and foreign practices based on presentations at various specialized forums and/orpublications. Most notably is the wide incorporation of cases of Bulgarian good practices in different types of libraries, especially those involving work with children and students. The main problem in the implementation of university IL education is associated with too general, poorly structured courses that do not allow students to obtain the skills and experience practice for specific work with different groups of users. These problems were found during a study of students and alumni from the three universities through observation, surveys and interviews. Education in the field of IL is oriented mainly towards providing services to three main population groups: youth (children and students), the elderly and those in retirement, and, especially, to those who have not had contact with new technologies and centers. Those providing IL education at the university level have two main sources of assistance: (1) the IL policy of the Bulgarian Library and Information Association, and (2) the permanent priority status of this topic in different scientific and practical forums and in the pages of library periodicals. Still, in Bulgaria, there are no clear regional policies or public consensus on the role of libraries, of the importance of IL, or ofthe development of an information society. The low level of teaching IL within disciplines reflects the absence of a national development of IL. University courses in IL focus on supporting initiatives that promoting reading and the transformation of libraries as public information centers and as places to maintain social contacts, especially in smaller towns. As a result, content in the course weighs heavily on the very strong presence of the Bulgarian experience with a fairly low application of the acquired knowledge into practice. The lack of coverage of IL evaluation and the absence of coverage of leading successful foreign practices in these university courses are the roadblocks to advancing IL practice in Bulgaria. On the other hand, truth be told, the state of IL in library education reflects the state of the library system in the country. The ways to overcome these bottlenecks to advancing IL education are to audit the courses, provide suitable structuring of the content and their orientation towards practice, and constant monitoring of the quality and the practical nature of the training.

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Keywords: *university library and information education, information literacy, national circumstances*

Research Data Management Reshaping the Research Society: Case of the Lebanese Academic Communities

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The widespread use of computer networks in business, entertainment and academia has transformed the patterns of production and dissemination of research in a drastic way. It is constantly reshaping the dialectical relationship among technologies, ethical values, and the superstructure of a society. The current paper researches the management of research data in academic institutions and research centers in Lebanon. The study sheds light on the current practices of those institutions, the policies they apply, the researcher's points of view, the technical knowledge needed, and the accompanied ethical research values. The research raises the following questions: To what extent is the research community in Lebanon willing to apply best practices of data management? How is this research community coping with new applications conveying new concepts of data sharing and cooperation, a practice that is not so common in the traditional setting? How do they perceive the new practices and their values? Is the institution and the individual sharing the same point of views toward data management?

The latter will be assessed through a questionnaire sent to a representative sample of the most prominent academic universities and information centers in the country. It is designed to be completed by researchers including librarians, faculty members, graduate assistants, and Ph.D. students.

In countries that rely on scientific research as a means to develop societies, our hypothesis assumes that the application of data management faces logistic challenges including the availability of technical skills. This lack might be solved by tailoring training and workshops. Nevertheless, the biggest challenge resides in adoption of new concepts such as data sharing introduced by the cyber-culture, the culture of virtual communities, since research contributes only slightly to the citizenship and democracy in a climate dominated by violence, individualism, seclusion, and fear of fate.

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Keywords: *data sharing, research society, data management, citizenship, cyber culture, academic society in Lebanon*

Required Skills for Teachers: Information Literacy at the Top

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This study seeks to contribute to a reflection on teachers' training and professional development in the field of information literacy, in Portugal. Aspects regarding teacher training and their role as spreaders of knowledge and multipliers of good practices are problematized. UNESCO's curriculum for teachers (Wilson, Grizzle, Tuazon, Akyempong, Cheung, 2011) and ACRL (2011) guidelines are used methodologically as the central thread of this interpretation. From here we seek to explain how a higher education institution – an Institute of Education -, which is devoted to the professional development of educators, including teachers, has engaged in information literacy actions through training interventions, in recent years. Since the implementation of the Bologna process, the development of competencies has been recognized as a new expression of the pedagogy of higher education (Earp, 2009; Perzycka, 2015). In fact, both students and teachers are more engaged in competencies for lifelong learning than in teaching based only on the transmission and evaluation of acquired knowledge. It is necessary to observe and reflect upon the way current university pedagogy is related to academic libraries, namely regarding the interception of intentions, practices and resources mobilized for the induction and development of informational skills, both in students and in teachers (Bernadowski, 2008; Bougatzeli, Togia, Papadimitriou, 2015). Through sharing and dialogue within the librarian profession, but also within the sphere of education professionals - teachers and trainers - the best training practices in university libraries can be consolidated. By providing information resources that are essential for the pursuit of teachers' academic objectives, university libraries can contribute to university pedagogy (Harada, Yoshina, 2010; Kovalik, Jensen, Schloman, Tipton, 2010). Finally, we propose certain points for reflection and debate concerning this theme.

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Keywords: *information literacy, teacher education, librarian teacher cooperation, higher education, Portugal*

Elements, Links, and Relationships in the Design of a National Information Literacy Policy

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During the last two decades, studies about information access have undergone an exponential growth. Many efforts were made on this theme, for example, the Budapest Open Access Initiative (BOAI, 2002, 2012 and 2015); Information Access Laws Initiative in many countries; and the Lyon Declaration on Access to Information and Development approved by IFLA. This declaration reveals that "Poverty is a multidimensional and progress in eradicating poverty is linked to sustainable development across of a variety of areas […]. Increased access to information and knowledge underpinned by universal literacy is an essential pilar to development" (The Lyon Declaration, 2014). Participating in the Agenda of 2030, IFLA acknowledged that information access and information literacy are key for sustainable development (Granda and Machin, 2016). According to Granda and Machin (2016), IFLA is advocating for the inclusion of information access, […] [and] universal literacy, [in] local, national and international arenas. However, another key element should be considered. That is information poverty or the situation in which individuals and communities, within a given context, do not have the requisite skills, abilities, or material means to obtain efficient access to information, to interpret it, and apply it appropriately. It is further characterized by a lack of essential information and poorly developed information infrastructure (Britz, 2004; p. 194), and understanding *information poverty culture* proposed by Childers and Post (1975). Meanwhile, the library and information science (LIS) discourse begins to draw more attention to pairing information with poverty (Haider and Bawden, 2006, 2007; Britz 2006).

Methodology

Information poverty culture has a close relationship with information literacy. To overcome economic poverty, one needs to know the link between information poverty culture and information literacy. This involves understanding the close relationships between a) information poverty, b) information literacy, and c) economic poverty. This triangulation between information literacy, economic poverty and information poverty will draw us not only to the development of policy options focused on the economic perspective, but also to build national information literacy policies, and to guarantee universal access to information in order to pursue all kinds of activities (social, economic and political), thereby helping achieve a country's development goals (Pajaro and Betancourt, 2007, 23). Elements like legitimacy, consensus, bindings, equity and inclusion, mainstreamed, transforming, innovative, attainable, technological neutrality, geographical context, and economical context should be taken into account in the design of those information literacy policies to promote the decrease of information and economic poverty.

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Keywords: *information poverty, information literacy, information policy, LIS discourse, information poor*

How to Mediate Train-the-Trainer Competency in the Field of Research Data Literacy: A Report from Practice

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The paper will describe all aspects of a train-the-trainer study that was applied to research data literacy, the latter being actually the most challenging and demanding field of information literacy.

Based on a theoretical work published in 2013 by the same author (Schneider 2013), the paper will show its transposition to practice by outlining the composition as well as the course of action of a one-day train-the-trainer workshop in detail. This workshop combined domain-specific as well as didactical elements that were explained and put into hands-on exercises throughout the whole day with only one third of the time being spent for theoretical input and the remaining two thirds for practice.

The workshop itself was the endpoint of a series of three vocational training courses that were split into 9 modules, namely four basic modules teaching the essentials of research data management and four specialization modules with a special focus on research data management in digital humanities. The idea behind the workshop was to start with the mediation of factual knowledge and to finish with andragogic skills to further enable the participants to pass on the knowledge acquired and the experiences made to their own public, becoming thus multipliers in this new domain. The course was mainly dedicated to librarians and archivists but open to researchers, managers, and computer scientists too.

The paper will describe all components of the workshop, i.e. a) an introductory example course, b) a methodological approach to create training courses, c) didactical knowledge to structure a course in detail, d) an overview of already existing courses being available online, d) a specific method to create a two-dimensional view on research data management course content representing all aspects of research data literacy and finally e) an exercise to create and visualize a specific course unit.

By writing the paper, special emphasis will be placed on the explanation of d) since it was based on prior theoretical work mentioned above and published in the papers of the 1st European Conference on Information Literacy (Schneider 2013). We will also give diversified references on research data literacy, and finally discuss the results of our own study, examining the particular interests and limits of this work.

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Keywords: *research data literacy, vocational training, train-the-trainer competences*

Developing Information Literacy in Interdisciplinary Classrooms: Engaging with Diverse Literacies

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Preparing students for their masters' dissertations requires understanding their abilities, needs and academic goals. This means faculty should provide multiple opportunities for students to develop and demonstrate information seeking skills, and have opportunities to apply these skills to research practices. Granted, this is easier said than done, particularly in post-graduate interdisciplinary courses where students will have a wide range of research and writing skills. In order to contextualize challenges teaching staff face, this presentation will describe methods lecturers can use to support masters level dissertation research in an interdisciplinary department.

A central issue in information literacy research is the potential for students to fall below academic competency standards. One component of this research focuses on lecturers not regularly reflecting on when and how students gain the ability to meet these standards. Consequently, students may reach the level of postgraduate studies where they are expected to perform research, but lack basic information literacy abilities (Conway, 2011). Although graduate students are discussed in LIS literature, references to their needs revolve around general library instructional issues, as opposed to instruction or guidance offered by lecturers during courses and advising (Exner, 2014). Based on these observations we argue that teaching staff overlook the need to augment library instruction with disciplinary insights that could prepare students to practice information literacy during their dissertation research.

Within disciplines there are standards and preferences for research methods, which require that lecturers describe their experiences and knowledge of appropriate frameworks and practices. In interdisciplinary departments where faculty have varying research practices (e.g., Digital Humanities), students will have the added challenge of negotiating a wide range of standards for information seeking and use. Considering these challenges in the context of dissertation research courses and one-on-one dissertation advising offers an opportunity to reflect on methods for evaluating student success outside of library information instruction. Namely, it will be possible to describe how students without core skills for information seeking and use perform while writing their masters' dissertations.

This presentation will contextualize the challenges of teaching information literacy in a diverse academic environment. We will discuss a framework lecturers can use to support master's level dissertation research, and reflect on its implementation over a six-month period. Evidence and descriptions will be empirical, but they will shed light on the challenges teaching staff may face when supporting student acquisition of information literacy skills at the post-graduate level.

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Keywords: *graduate students, information literacy, interdisciplinary studies*

Where to Now? – New E-Learning Concepts and Co-Creation at the Technical University of Denmark (DTU)

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In 2014 to 2016 DTU Library was involved in a large multi-institutional public funded DEFF (The Danish Electronic Research Library) project entitled" E-learning, information literacy and library services", which focused on, among other aspects, enhancing links between education and employability, including information competencies. As a part of this project DTU Library and The Royal Library, Copenhagen, developed and implemented a MOOC (Massive Open Online Course) in academic information seeking, primarily using the media platform of video. The MOOC was made publically and globally available on the Coursera platform and has been visited by 13,839 users from 154 countries.

This paper will analyze and discuss how we have used the results and experiences from the DEFF project to develop and further qualify our e-didactic and e-learning endeavors and how we have used the in-house produced videos in existing courses. We will discuss the pros and cons of the video medium seen from the perspective of DTU library.

The second part of the paper will look to the future and how a new DEFF funded project running from 2017-2018 will seek to establish new solutions taking their inspiration from the concept of co-creation and creating new e-learning objects in close and continuous cooperation with students at DTU and how peer-embedded learning will strengthen academic information seeking and retrieval amongst selected groups of students at the university.

The paper will discuss underlying theory of the two DEFF projects, the pre-defined target groups and how experiences and conclusions from the first DEFF project influenced and charted the direction of the second DEFF project in relation to actual initiatives at DTU Library.

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Keywords*: MOOC, e-learning, co-creation, information seeking, information retrieval, information literacy*

Information Literacy in a Post-Truth World: Machines, Lies, and New Library Services at My Workplace

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The usual mantra one hears nowadays is that we need information literacy and libraries as providers to information literacy more than ever in order to equip users in distinguishing between real and fake news (Ayre, 2016). This supposition rests on the conviction that people are not very clever and do need a little help in recognizing fake news on their own. The supposition of this paper is that people are not that helpless and that they, in fact, choose to believe that the fake news is true. The main part of the paper is devoted to a discussion of the consequences of such a supposition for workplace behavior. I propose that the response will be a new information literacy with new role for libraries in such an environment. The paper also presents logic behind the before mentioned supposition based on experiences and existing research in events leading up to the break up of former Yugoslavia, a pioneering era for fake news.

When a person chooses to believe that some fake news is in fact true, this cannot proceed without consequences for professional performance at the workplace. When most people in one society start to believe that something that is not true is true this makes for a new business environment (Sita, 2017). If companies, employers, and other stakeholders are to factor in these new phenomena to the business equation they need true data in order to make efficient and effective business decision based on the real, ongoing environment. The challenge is that peoples' beliefs may change quickly and frequently in a post-truth world. A complex library system built on data from social networks is needed if one is to grasp all beliefs. So far, libraries have been positioned as guardians of some data coming from social networks. If this role is expanded the opportunity for a new role for libraries as providers of useful business-related information would arise. This new role would be based on their collections of social media data and on the role of librarians as educators for a new information literacy that would be needed to use these new library services at the contemporary workplace.

The new library services depicted in the paper may prove useful for business information useful in theworkplace environment of a post-truth world. They are built on data coming from social media that are preserved as part of library collections. The services depicted in the paper provide for a prediction of social trends on certain issues important in contemporary business environments and are enabled by statistical analysis of vast collections of social media data. The paper discusses some issues related to openness of social media data and possibilities libraries have to expand on the usual amount of data available from social media in regards to privacy issues.

In order for libraries to fill this new role they need to develop more sophisticated systems of collecting and preserving data coming from social networks. Thepaper presents some ideas on how this can be achieved. More robust library management and organizational systems are also needed in order to provide for the acquisition of knowledge needed to maintain and operate efficient market prediction based systems. Libraries and their stakeholders also need to shape the vision for publicly available information services. The paper depicts the place of Open Access in providing data from such a system. Some conceptual challenges to these services are also presented. Finally, the paper envisions an educational role for libraries in providing training in information literacy needed in the workplace in order to use the before mentioned new library services.

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Keywords: *information literacy, post-truth world, new role of libraries, workplace behavior, fake news*

Workplace Information Literacy: Co-designed Information Experience-Centered Systems and Practices

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Objectives

A collaborative design initiative in a North American academic library was initiated in 2016 to enhance information literacy and enrich learning conditions in the workplace. This paper describes co-workers' information intensive and learning centered design processes, which intend to further collective capacity for 'using information to learn' (Bruce, 2008), over a twelve-month period. Throughout, attention focused on "being aware of the kinds of information we are using, how we are using information and how different forms of information come together to inform and transform our work" (Bruce, Hughes, & Somerville, 2012, p. 8-9). Reflection and dialogue on information experience stories further aimed to "allow individuals and groups to experience information and the information environment surrounding it in a range of increasingly complex ways which offers them a richer, broader and more effective information engagement experience" (Sayyad Abdi in Bruce, et al. 2017).

Methodology

The co-design initiative began with collecting and sharing 19 co-workers' stories of workplace information experiences. Initial analysis focuses on revealing the wide variation in the what, how, and where elements of stories, to further appreciation for what is valued?, where does it happen?, and how does it happen? To achieve deeper understanding, stories were next coded according to informed learning categories: 1. information and communication technologies, 2. information sources, 3. information and knowledge generation processes, 4. information curation and knowledge management, 5. knowledge construction and worldview transformation, 6. collegial sharing and knowledge extension, and 7. professional wisdom and workplace learning (Bruce, 2008).

Outcomes

Data analysis revealed that a majority of reported information experience stories reflect individual learning processes described in informed learning categories 1 – 4. Higher level informed learning categories 5 – 7 were seldom present. In reflecting, co-workers considered: What information experiences do we want to facilitate or make possible? What information and learning experiences are vital to further our professional work? (Bruce, 2013). Insights now inform co-worker co-design of the communication systems, learning conditions, and workplace practices integral to Informed Systems (Somerville, 2015).

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Keywords: *informed learning, informed systems, information experience, information experience design, co-design*

A Performance-based Test for Assessing Students' Online Inquiry Competences in Schools

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The paper introduces a performance-based test for measuring elementary students' competences in online inquiry. The project draws on information literacy research in library and information science, and online reading research in education. Online inquiry competence' (OIC) refers here to 'information literacy' (IL) in the Web dominated information environment. The test covers four competence areas essential in online inquiry: 1) searching and selecting relevant sources, 2) identifying main ideas presented in sources, 3) evaluating the credibility of sources, and 4) synthesizing information across sources. The instrument was developed to measure students' online inquiry performance in authentic learning assignments, and at the same time meet the requirements set for the pre- and post-tests of rigorously designed teaching intervention studies. In library and information science, fixed-choice IL tests have been developed applying the IL competency standards (Chang, Foo, & Majid, 2014). In educational sciences, a major effort has been made to develop methods and tools for teaching online inquiry (Kiili, Coiro, & Hämäläinen, 2016), and for assessing online research and comprehension skills (Leu et al., 2014). Our approach is to integrate these two lines of research so that all four competence areas can be treated in a balanced way. The paper describes the theoretical and empirical framework of testing OICs, and the development of the implemented test. The experiences of applying the test in two pilot studies and one large intervention study are reported. In the intervention study, the test was administrated in 10 primary schools participating either in the experimental or control group (n>300). The analyses of the test data are demonstrated by presenting preliminary results from two school classes (n=36). The strengths and limitations of the implemented test are discussed.

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Keywords: *online inquiry competences, information literacies, performance-based tests, schools, pupils*

Everyday Life Information Needs and Information Seeking Behaviors of Public Library Users in Turkey

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Individuals need information in various subjects in their day to day life. Everyday life information is defined as the type of information resolving the problems encountered in daily life. In the literature, it is considered as information related to travelling, transportation, health, education, work, family, household issues, social security, house decoration, school, work, free time activities, and weather forecasts (Gray, Snarr, Vallance & Zero, 2005; Barrett, 2004; Agosto & Hughes- Hassell, 2005).

As part of their missions, libraries, especially public libraries, play a significant role in satisfying everyday life information needs of the individuals of every age, profession, and education level. Determining the everyday life information needs of current and potential users is useful not only for designing services that can satisfy users' information needs but also for collection development, revision of current services, and development of policies and strategies in accordance with these needs. However, the number of studies on everyday life information needs in Turkey is limited.

This study aimed to determine the everyday life information needs and information seeking behaviors of Ankara Adnan Ötüken Provincial Public Library (AAÖİHK) users (Soylu, 2016). It is also aimed to find out, if any, differences in needs and practices across age groups, gender, profession, and educational background.

A survey was conducted between 15th November and 15th December in 2015; 531 users who visited the library during this period participated in the survey. The questionnaire was composed of three main sections. The first section was devoted to demographic information, levels of computer literacy skills, purposes, and frequency of library use. The second part was about everyday life information needs. The last part covered information seeking behaviors, problems encountered, opinions about the library facilities, and expectations from the library.

A majority of users were found to be interested in and looking for information about topics such as social and cultural life, hobbies, education and research, health, news and weather forecasts, and transportation. The Internet, library materials, radio and television, and social media (Facebook, Twitter, Pinterest, Youtube) were among the most commonly used sources. Findings of the survey indicated statistically significant correlations between demographic features of users and their everyday life information need and information seeking behavior. A statistically significant correlation was found between the daily life information needs of users and their age ranks; whereas, it was partially proved in terms of gender and educational level. In studying the information sources commonly used, a significant correlation was found out only in age ranks.

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Keywords: *everyday life information, everyday life information need, information seeking behavior, Adnan Ötüken Provincial Public Library, Turkey*

Information Literacy Practices in Scholarly Workplaces as Information Ecologies

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The purpose of this paper is to explore information literacy practices of researchers in scholarly workplaces in the context of information ecologies. Scholarly workplaces are understood as physical and digital spaces for workplace information literacy practices. Information behaviour of scholars, workplace information and models are briefly reviewed (Widén-Wulf, Steinerová, Voisey 2014). Information ecologies are determined as dynamic systems of people, practices, values and technologies (Nardi, O´Day 1999). Information landscapes as dynamic representations of information environments are regarded as contexts of information literacy practices in disciplines based on discussions (Whitworth 2014). Changing information practices in digital workplaces are challenges for information literacy research. That is why workplace information literacy (Abram 2013) in scholarly work needs more attention.

A qualitative study of 19 researchers in Slovakia is mentioned as an example. The objective of the study was to identify information needs and attitudes of researchers to information infrastructures. In this paper, we report on findings with regard to information practices and barriers. We asked the following research questions: What is the influence of workplace information infrastructures on sustainable information practices of researchers? Which values, sources and barriers are most significant in information ecologies? We applied the methodology of semi-structured interviews, content analyses and especially concept mapping for representation of the collective discourse. As examples, selected concept maps representing values and barriers are outlined pointing to social, individual and technological contexts of information practices in scholarly workplaces.

Findings suggest that expertise and methodology are main factors in workplace information literacy practices of researchers. The identified barriers in workplace information infrastructures include administrative overload, lack of integration and funding. The diversity of workplace information ecologies depends on disciplinary contexts, cultures of disciplines and multiple roles and tasks of researchers. Multidimensional factors influence workplace information ecologies in digital spaces. The range of information practices broadens into collaboration and participation in digital communities, information sharing, verification of information sources and digital literacy.

Information literacy research should take into the account the dynamic information ecologies in scholarly workplaces. Information practices of researchers differ in disciplines and depend on information infrastructures. Our findings point to a strong common factor represented by research creativity. Dynamic information ecologies in scholarly workplaces can inform policies, information literacy development and design of digital services. Sustainability of scholarly information practices is determined by deep motivation of researchers, participation in digital communities, context-specific strategies and integration of research data and information services.

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Keywords: *information literacy practices, scholarly workplaces, information ecologies, concept mapping*

Information Skills Which Teachers Would Like to Teach and Which Students Would Like to Learn: the Survey of Information Literacy in Senior High School

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Information literacy in Japan

Today school teachers are facing the policies of information literacy conducted by the ministry of Education, Culture, Sports Science and Technology(MEXT) in Japan. Unfortunately, their recognition of the definition of information literacy is insufficient because university students and trainees rarely have opportunity to learn it, even though they have practiced IL across the curriculum. It is in the training courses of teacher librarians that they can learn information literacy. The training courses of teacher librarians are offered in university undergraduate courses, summer sessions for teachers without title of teacher librarian, and the Open University of Japan.

The survey of the information literacy

The author (2017) collected questionnaires related to information literacy among university students and teachers. There were three multiple choice questions in the questionnaire: "what do you think of information literacy?", "which skills do you yourself wish to acquire?" and "which skills would you like to teach to your students?" The results of the survey indicated that most of the university students and school teachers were willing to acquire skills to search information, to read information and to present their results, whereas they were unwilling to acquire a skill to evaluate information and a skill to make a note. They were half-hearted about instructing these skills as well.

This paper discusses the results of questionnaires among forty-three teachers and approximately seven hundred students in senior high school. The first and second questions were adopted for the high school students. This survey focuses the information literacy which teachers would like to teach and which the students would like to learn in high school. The information skills I adopted in the second and third questions were based on the PLUS model published by James E. Herring (1996). These skills referred to the Information Research Process Model "Processus de recherche d'information" by Maritine Mottet, Université Laval as well. We found that the school teacher would like to teach information skills to search, read and present, and the students would like to learn information skills to search, read and use PC.

Van Dijk and Van Deursen (2014) argued that less attention has been paid to so-called information skills, the ability to search, select, and evaluate information in digital media. As the explosive increase of information is progressing, the ability to select and evaluate information is crucial. When students become adults and work in society, it is getting more important to explore, select and evaluate the variety of information. We will reflect the results of analysis in information literacy education.

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Keywords: *information skills, survey, teachers, students, high school*

Data Literacy and Research Data Management: the Croatian State of Affairs

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Introduction

The range of literacies researchers are expected to demonstrate in times of dynamic transformations of research landscapes is widening and defined by more complex requirements in research documentation and publishing (Koltay & and Špiranec, 2017). In order to respond to these expectations, researchers need to acquire knowledge and skills that enable them to access, interpret, critically assess, manage, handle and ethically use data, i.e. they need data literacy (Calzada Prado & Marzal, 2013) as an extension to IL. This report is a part of an international survey on data literacy and research data management and is concerned with the Croatian state of affairs. The endeavor of providing good support for research data management is a very current issue for Croatia. Several projects aim to establish a quality data infrastructure in the Croatian higher education area, while others emphasize the importance of research data management. Our participation in this survey aims to contribute to this national effort by conducting a data literacy analysis of academic staff and research students at the University of Zagreb.

Objectives and value

A key aim of this study is to elicit the practices of Croatian researchers and PhD students regarding the production, dissemination, provision, storage, and description of research data, as well as portraying institutional attitudes towards those issues. The contribution of Croatian data to this study widens the international perspective on research data management. Findings of this study will expose the current levels of awareness and gaps in knowledge and allow us to offer structured and well-focused educational activities.

Methodology

The University of Zagreb is the largest university in Croatia and it employs more than 7000 academics. This study was conducted on a sample of 465 members of academic staff and research students distributed among six general subject areas. The survey constructed on the Limesurvey service was distributed via e-mail and consists of 24 questions. The data was collected in February 2017.

Expected outcomes

A preliminary look at the data shows that Croatian researchers are highly engaged with common data formats and mostly produce data of the same kind. However, while a lot of data is being produced, it is not being preserved and stored in a satisfactory way. High collaboration between researchers and extensive data sharing are not followed by good data description and organization practices. A key issue is the lack of institutional incentives to broaden knowledge on how to manage research data. We expect that many researchers will welcome the possibility to gain more knowledge on data management best practices.

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Keywords: *data literacy, research data management, academic staff, Croatia*

Information Literacy in Distributed Digital Work

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Introduction

Our research addresses information literacy (Crawford & Irving 2009, Lloyd 2013) within emergent forms of work. More particularly, we study information literacy within two contexts of distributed digital work: open sourcing and crowdsourcing. A key characteristic for these work settings is that the commissioner/employer and the worker/employee never meet. Thus, all information needs to be provided at the outset of the task and additional information may be difficult to obtain. Our main objective is to better understand information literacy within these novel working contexts.

Theoretical Background

Open sourcing (Dorman 2002) seeks to extend the intellectual commons into the realm of computer software (for example the Linux operating system), and digital repositories (such as Wikipedia for encyclopedic entries and Wikimedia for photos and other media files). Open-source software are released under permissive legal licenses that keep the software and its source code open to the common heritage of all: everybody is free to use, study, modify, and redistribute copies of the software. The work is carried out in its entirety online, without any manual tasks or phases. Open-source communities have developed established ways of giving information about the task. They also employ software robots to test the code developed.

In crowd work (Brabham 2013; Sundarajan 2016) the commissioner/employer and the worker/employee typically interact only via the digital platform. Owners of the platform include dedicated platform companies or, for example, large enterprises that use their own platforms as a means of acquiring new ideas to product and service development. This kind of crowdsourcing is an approach for enterprises to maintain a flexible workforce that is able to solve parts of business processes formerly processed in-house. (Satzger et al., 2013).

Crowdsourcing only produces for the commissioner and does not produce anything for the digital commons. The commissioner describes the task and the criteria for acceptability. Any additional information is conveyed only between a single worker and the commissioner.

Two Cases of Digital, Distributed Work

We employ a multiple qualitative case study approach, juxtaposing two cases. These are the OpenMolar open-source project for developing dental practice management software and the CrowdFlower crowdsourcing project for geographically mapping housing and wheelchair accessibility. Extant knowledge in information literacy informs our analytical procedures.

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Keywords*: information literacy, digital literacy, digitalization, open-source, crowdsourcing*

Data Literacy and Data Research Management: Results from a Portuguese Survey among Researchers and Academics

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The quantity and variety of data produced by researchers has created a data deluge (Borgman, 2012). The concept of data literacy has emerged in order to face the challenge of managing the volume of data. According to Calzada Prado & Marzal (2013) data literacy concerns the capabilities of individuals to access, interpret, critically assess, manage, handle and ethically use data. This definition presents a strong relationship with information literacy (Koltay, 2015).

The purpose of this paper is to present some Portuguese results from an international survey about data literacy of academics and researchers. The Data Literacy and Research Data Management project was developed by an international team from England, France and Turkey in order to collect data about the data literacy of academics, researchers, and research students in higher education institutions. In a second phase, the project was opened to include other countries to allow a broader comparative study. In order to facilitate cross-country comparisons a common questionnaire, using English language, was created by the initial team and then translated in the language of each participating country. The Portuguese version was disseminated at the beginning of January 2017 and contributions received until the end of February. The Portuguese team includes researchers from universities and polytechnic institutes from the two higher education sub-systems of the country.

The questionnaire included 26 questions, organized in two groups. The main findings of the responses to the two questions groups will be presented and analyzed. The first group aims to collect demographic information including occupation, age, discipline, gender, country, and institution. The second group focuses on awareness of data management issues, including aspects such as type and volume of data used by researchers, sources of data, types and volume of produced data, devices to store data, and addition of metadata to research data. Issues related to data sharing and data storage are also included. Awareness with respect to data management and to the processes associated with research data are also assessed, namely concerning the use of data management plans, at the institutional or individual level, and the use of metadata associated with research data. This is covered in questions about standard file naming system, DOI and ORCID identifiers, guidelines for citing data, or data annotation. Questions related to training on issues concerning research data management, such as data management plans, metadata, consistent file naming or data citation styles, were also included in the survey.

Survey results analysis will be contextualized on a review of the literature concerning data literacy skills and their relationship with information literacy.

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Keywords: *data literacy, data management, information literacy, Portugal*

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Data Literacy Survey Implementation at ULSIT

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In the frame of ECIL 2016, researchers from the United Kingdom, France and Turkey initiated new international research on Data Literacy and Research Data Management (Chowdhury et al, 2016). Convinced that the survey, aimed at collecting data about data literacy of academics and research students in higher education institutions, is timely, necessary, and very useful, a team of researchers from the University of Library Studies and Information Technologies (ULSIT) joined an international scientific group to collaborate.

The questionnaire survey, 'Data Literacy Survey,' contains two groups of questions: the first group – aims to collect demographic information about the respondents, and the second group – aims to establish their competence regarding management of research data. The implementation of the 'Data Literacy Survey' in ULSIT will pass through three stages. During the first stage, January 2017, a translation of the questionnaire instruments from English language into Bulgarian was carried out and a respondents' list was created, covering 150 participation invitations to representatives of the academic community: lecturers and doctoral students. The second stage, February - March 2017, includes dissemination of the participation invitation in the online based survey (Lyme Survey) and accumulation of data. The third stage involves analysis of the results, elaboration of a document with conclusions and recommendations, as well as the preparation of a scientific article. Participation at various forums and events in the country and abroad have been planned, aimed at continuation of the communication on this significant range of problems.

The purpose of the analysis is to collect data for making assessments and conclusions with further reflection on the institutional policy and the specific improvements of the Quality of Education Management System (QEMS) at ULSIT. We consider that important recommendations on the necessity of establishment of institutional policy for the implementation of the Data Management Plan will loom large. Recommendations may call for the establishment of a prescribed metadata set for uploading data into a university repository and of specific guideline for citing data and others. The systematized conclusions will be provided to all individuals and groups responsible for the quality standards design at the university. Understanding the current levels of awareness and gaps in knowledge of the research community at ULSIT will help us to suggest the appropriate data literacy training in the near future, based on international experiences and standards.

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Keywords: *data literacy, research data management, higher education, training, ULSIT*

Intellectual Property Training of Library and Information Management Bachelor's Students

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University of Library Studies and Information Technologies (ULSIT) has contributed to the successful dissemination of knowledge in the field of Intellectual Property (IP), as there are already 20 years of experience in IP courses for non-lawyers. As the main spheres of employment of our graduates are in public institutions and the use of information resources is the basis of their future professional activity, they need to be well informed on the issues of the protection of IP (Trencheva & Denchev, 2016). Although the importance of training in the IP field for the Library and Information Science (LIS) students and professionals is recognized, a study of copyright literacy of specialists from the library and other cultural institutions conducted in Bulgaria in 2013, highlighted serious gaps in the knowledge and awareness, and the inability of the professionals to deal with the copyright issues arising in the real working environment (Todorova & Trencheva, 2014). The unsatisfactory level of the copyright literacy of Bulgarian professionals is highlighted in the comparison with the results of a survey among their colleagues from other countries (Todorova et al. 2014).

This report presents our training model of IP for the needs of the Bachelor's program "Library and Information Management", prepared as an answer on the established knowledge gap. For the academic year 2013/2014 we updated our curriculum and prepared the obligatory courses – "Intellectual Property", and "Digitization and Copyright" and the elective courses – "Intellectual Property in Internet", and "Law, Media and Advertising". We are convinced that for optimizing the quality of LIS education in preparing future professionals, according to the new demands of the information and digital reality and copyright and legal issues - it is important for LIS students to be introduced to IP as early as possible during their formal education and to have the sustained development throughout all educational levels. Also, IP can be considered as an element of information literacy in university information environments. Evaluating our four years of experiences, we need improvement and coordination on the international level.

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Keywords: *intellectual property, copyright literacy, LIS education, library and information management*

Threshold Concepts and Information Experience in IL Professional Education: Curriculum for Transformative Online Learning

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Research Context

Information literacy (IL) professionals are engaged in teaching, mentoring, and collaboration, roles that call for deep understanding of information structures, learning design, and tactics for navigating the information environment. The relatively new construct of 'information experience' (Bruce et al., 2014) provides insights into these integrative roles. Indeed, a key element in distinguishing one's identity as an information professional is that, entwined with our own information experience, we play a facilitative role in the information experience of others (Tucker, 2014). We help others move forward in how they experience information in their communities, workplaces, and professions, and we influence what they find, what they determine to be of value, and even how they contribute to online content and metadata. The information experience construct and the theoretical lens of threshold concepts are considered together as the research foundations in this paper. Threshold concepts in the library and information science domain have been explored for professional expertise in the search environment (Tucker et al., 2014) and for IL (ACRL, 2016; Townsend et al., 2016), and this sets the stage for rich discussion of the information educator's roles, as well as to the experiential realm of threshold concepts specific to ontological shift for the educator-as-learner.

Objectives

Education of new IL professionals for the roles described above is taking place in a diverse learning landscape. This paper frames its discussion in the threshold concepts and information experience research literature, then focuses on online education for information professionals in two areas: (1) instructional activities and sequencing of assignments that support learning of threshold concepts; (2) reflective work on how threshold learning experiences affect not only the student but also the IL educator (Cousin, 2010). An advanced course on database search methods, redesigned based on threshold concept research (Tucker, 2016), is used as a case illustration; its online activities and assignments are presented, along with the research-based threshold concepts they actively support; and student responses are reported. A primary objective in the course redesign was creating opportunities for students to discover critical understandings on their own, the result being more wrestling with new content but also more 'stickiness' (irreversibility) of concepts learned. Facilitated questions during the session will include: What activities described in the case illustration might you adapt for use in your own teaching? What other activities in the online learning environment are you using that are especially effective for threshold learning experiences? How have you been affected by your own instruction that is guided by threshold concepts?

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Keywords: *information experience, MLIS education, IL professional education, online learning, threshold concepts*

Exploring the Need for Intellectual Property Information Literacy for Business and STEM Disciplines

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A major component of any Information Literacy training incorporates training on copyright and fair use. However, while librarians have provided excellent training on copyright and understanding appropriate use, there is very little in the library literature written about other forms of Intellectual Property (IP), in particular, patents. At many academic institutions, greater emphasis is now being placed on commercializing the research of universities with STEM programs, yet there is very little training/education available to ensure faculty, researchers and students have a useful foundation and understanding of IP. Villasenor (2012) discusses the lack of knowledge about IP by UCLA engineering students and the ramifications this ignorance means to the commercialization of research. A recent survey done by the United Kingdom Intellectual Property Office (2016) shows increasing interest in equipping STEM students with a greater understanding of IP as it applies to their studies.

The goals of this paper are to create an awareness of IP/patents and how librarians can incorporate IP/patents training into their STEM and Business specific IL programs. This paper will suggest a framework for an IP literacy program by addressing the following questions:

- IP literacy (IPL) definition;
- Reasons for developing an IP/patent literacy component;
- "Who needs IP literacy training (target audiences)?";
- Suggestions of what could/should be included in designing IP/patent literacy components;
- Issues that hold back the development of an IP/patent literacy component.

Universities and businesses that have research programs are realizing that in order to maximize the value of their research, their people need to have a better understanding of IP. Teaching IP Awareness/Literacy is an opportunity for librarians to bring needed expertise by expanding IL training into the area of IP basics. Librarians can bring greater educational value since there are parallels with what is already taught in existing IL programs.

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Keywords: *intellectual property, business, STEM, IL programs*

Research Data Literacy in Slovenia

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Data Literacy or Research Data literacy (RDL) is defined as "dimensions of information literacy that are dedicated to the creation, management, and reuse of research data" (Schneider, 2013). Schneider also defines RDL as a subfield of Research Data Management (RDM), which is concerned with "processing of all types of raw or primary data, that are created along every research process", RDL being the segment dealing with educating students and scientists of all disciplines, as well as librarians who provide them with library services. As Koltay (2015) argues, an important characteristic of RDL is its close connection and similarity to information literacy. In recent years these issues have gained attention due to the trend of open science and open access to research data.

The original research of RDL and RDM was carried out in three countries (England, France and Turkey) in 2016 and continues in 2017 by extending it to other countries. This paper presents preliminary results for Slovenia. As part of the second phase of this international study, we plan to collect data about the RDL and RDM of academics, researchers and research students in higher education institutions. A purposive and stratified sample of active researchers will be included from all three public universities as well as major research institutes in the country, thus aiming to cover all scientific disciplines.

As in all participating countries, we will use a 24-question online survey, translated to Slovenian. It consists of five demographic questions (primary role, age, gender, discipline, research experience) and 19 content questions (single/multiple choice and Likert scale type). The latter cover various issues regarding awareness of RDL and RDM issues:

- type of data used
- usual volume of data used and produced in research
- sources of data used for research
- type of data produced in research
- storage of research data
- availability of research data
- potential concerns regarding research data
- existence of data management plans and policies (individual and institutional)
- openness of research data
- costs of data management and storage
- research data literacy training.

Our research will be the first to investigate the research data literacy of Slovenian scientists and academics and will be useful not only for international comparisons, but also to inform future decisions regarding institutional and national policies related to research data management and research data literacy.

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Keywords: *data literacy, research data literacy, research data management, researchers, academics, Slovenia*

Digital Literacy Practices of Young Children in Informal Learning Spaces

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This paper reviews research on digital literacy practices of young children (0-8 years) in out-of-school settings or in informal learning spaces/settings. There is an identified lack of research overviews on this topic. The purpose of this review is to identify the literature and topics that have arisen from non-school-based or informal space research and to highlight main directions and dimensions. The major research question is: What is the role of informal learning spaces in shaping children's digital literacy practices?

Learning occurs every day in many ways and in a variety of settings. Children do not just learn about their world through formal education, there are the wider influences of home, including parents and siblings, and the community and society in which they live (Sefton-Green et al, 2016). Learning scientists study learning in a variety of settings and stress that learning develops across multiple timeframes and settings. They emphasize the importance of deep links between formal schooling and the informal learning that takes place at home, libraries, museums, galleries, learning and community centres, clubs, through online activities, and among peers (Sawyer, 2008, p. 1). The learning environment is becoming increasingly digital, online, and informal as children engage in a range of digital meaning making practices in these settings. These practices are under-researched areas in relation to children age from birth to eight (Sefton-Green et al., 2016, p. 28). However, an understanding of the connections between digital literacy in formal and informal learning environments is essential to furthering children' digital literacy skills. Sefton-Green et al. (2016, p. 19) suggest that this offers a broad framework for conceptualising the operational, cultural and critical dimensions of diverse schooled and informal literacy practices, providing a theorised and growing research-evidence base for thinking beyond the focus on 'basic skills' that currently prevail in many EU literacy curricula and policy discourses.

Literature searches were undertaken on multidisciplinary, education, and library and information science databases. The search strategy contained three components: terms relating to digital literacy and digital skills, informal learning spaces/settings, informal learning environments and out-of-school settings, and terms relating to young children from birth to eight. Relevant documents were identified and analysed. The review of the literature is framed as a narrative literature review and organised on five emerging themes drawn from the literature: 1) informal learning in libraries, museums and galleries, 2) informal learning in learning centres and community centres, 3) informal learning in clubs, 4) informal learning via social media, and 5) informal learning via games.

This research attempts to bridge the gap that exists between children's uses of digital technology at home and in other informal settings and contributes and highlights the need for studying learning more holistically.

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Keywords: *digital literacy, informal learning, informal learning spaces, informal learning settings, out-of-school literacy practices, learning theory, literacy theory, young children, libraries, museums, social media, games*

Intergenerational Learning Approaches and MIL

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Intergenerational learning is becoming increasingly important in ageing societies. However, it is not only demographic development in many western industrialized countries that raises questions in terms of the prospects for old and young people living together. Another issue is that the media worlds of old and young people are drifting apart, jeopardizing participation and equal opportunities within society. Against this background, intergenerational approaches – also from the point of view of life-long learning – are particularly suitable for building bridges between different learning contexts and learning groups, and for initiating social learning processes.

Libraries in Germany are increasingly adopting intergenerational approaches in order to offer inclusive educational projects that promote media and information literacy (MIL). This is because, as research shows, the generation-specific media activities of adolescents and young adults are not, as a matter of fact, characterized by "competent" handling of digital technologies, as the buzzword "digital natives" suggests (cf. Jandura & Karnowski, 2015 or Herring, 2008). Upon closer scrutiny, the challenges mainly concern the extent to which they deal with digital media in a controlled, reflective and ethical way. Despite all the available technical knowledge and experience, younger people need support with this in formal and informal learning contexts.

Moreover, it is important to promote MIL of older citizens in order to ensure they have equal opportunities in relation to the population as a whole, which has already extensively integrated the internet into work and leisure and as a medium of participation. According to research findings, older people – who were socialized via traditional media – have a historical-comparative perspective which entails a conscious, pragmatic but rather distanced attitude towards the new media (Schorb, 2009). In contrast to younger people, they ask "what's the point" of using the – from their perspective – "new" media. In any case, they often do not have the skills to tap the full potential of these media for themselves because their IT skills – by their own admission – are inadequate (van Eimeren & Frees, 2014).

In the context of promoting media and information literacy, these ambivalences should be seen as an opportunity, for – because of their critical attitude – older people can potentially prompt younger people to reflect on things that are so often just a matter of course for them. This gives the library, as a place where people meet and learn, starting points for initiating cross-generational learning from, with and about one another. With the aid of best-practice examples from Germany, my paper will demonstrate how quality educational projects use the differences between generation-specific media activities as a "source of friction" in order to initiate social learning processes, without, however, expounding on these. In this way, older people can learn from younger people (and vice versa), without feeling that their own way of dealing with media is somehow inadequate. Furthermore, libraries create a space in which young and old people can meet, and in which they can feel valued, respected and supported.

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Keywords: *information literacy, intergenerational learning, media generations, life-long learning*

Shaping the Future Information Professionals: Searching for the Balance of Job Requirements in Libraries and Education

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Introduction

Educating and preparing future information professionals for work is often challenging when taking into account the changing world in which developments happen so fast and, as a result, shape new job requirements in different areas of employment. "Key drivers of change today include rapid advances in computing and networking technologies, continuing growth of the information and knowledge economy and expectation of value-added personalized services" (Corall, 2005). To meet the challenges, educational institutions provide students with up to date knowledge - skills necessary to increase the employability of students. The term employability itself usually includes many different skills like communication, teamwork, problem-solving, initiative and enterprise, planning and organizing, self-management, learning and technology (Board of Studies NSW, 2012) and different literacies. The employers, government and private sector organizations demand highly knowledgeable, skillful and motivated individual and seek shorter time of education and thus seek, immediately available highly skilled individuals while educational institutions promote more thorough acquisition of knowledge, skills and literacies which would serve as foundations for quality work and lifelong learning, making their communication about knowledge and skills necessary for greater employability of students sometimes very opposing. To find out the level of satisfaction of major employers of information professionals – libraries with the current state of acquisition of knowledge, skills and literacies of future information professionals, a research study was initiated. This paper will present results from that research study.

Objectives

The objective of the research is to collect data from participants in public libraries in Croatia, about their views on the knowledge, skills and literacies necessary for future information professionals. Research aims to provide answers to three problems: 1.) do libraries have a planned approach to assess potential employees' knowledge, skills and competencies based on research-based knowledge of their own needs; 2.) do they think their employment plans follow academic efforts and study programs at universities and vice versa; 3.) what is their view on the future of education for information professionals?

Methodology

The paper will use literature review for introducing the topic of acquisition of knowledge, skills and literacies and employability. In the second part of the paper, a survey will be used as the principal method for collecting data from heads of public libraries in Croatia after which statistical analysis, comparison and description will be used to present results of the research.

Outcomes

Topics of acquisition of knowledge, skills and literacies together with employability of future information professionals require active involvement of several stakeholders: students (future working force), employers, and educational institutions which prepare students for different digital technology related and supported jobs. The main outcome of this research will help both universities and libraries improve their mutual understanding of what knowledge and skills future information professional should possess.

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Keywords: *education, libraries, workplace literacy, employability*

Learning Information Literacy and Teaching: an Action Research Project

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We report on preliminary results from an action research project undertaken with learners on a distance learning information literacy (IL) module (part of a Masters level programme). The project aims to investigate how the module contributes to their development as future teachers of IL. Data consisted of student interviews, student evaluations and tutor/peer reflections (including reflections on feedback contained in students' reflective assignments). We will begin the presentation by comparing key aspects of learning in two core IL modules, one delivered on campus and one to distance learners (DLs). We surface differences in teaching approach and characteristics of learners in the two modes of learning as part of the reflective element of Kolb's (1984) experiential learning cycle. We follow with a brief analysis of interview data gathered from DLs in 2016, and finish by mapping our development through the action research cycle.

Graduates of these programmes often pursue careers requiring excellent personal IL and the ability to teach IL to others. Inskip (2015) identified that library and information (LIS) students want to learn about these subjects, and Saunders et al.'s (2015) international study found that LIS students' IL requires development. Some DLs are already engaged in IL teaching. Our modules aim to develop students' understanding of themselves as information literate citizens and teachers, and introduce them to theories and models in the fields of IL, information behaviour, teaching and learning.

Using Entwistle et al.'s (2004) model of the Teaching and Learning Environment (TLE), we will map key elements (such as learner characteristics, teachers' approaches, course design) relevant to the quality of learning. We will also look at three "layers" of teaching: (1) Overall pedagogic beliefs and institutional policies; (2) Design for learning; (3) Techniques, tools and methods used. Through the use of the TLE model we surface differences in the experience of the two groups of learners and also differences in development of their personal IL and pedagogic knowledge for IL.

A strongly reflective approach is taken (McKinney and Sen, 2012), both as regards class activities and the assessments (requiring reflective writing on students' own IL development and their approach to a teaching task). In research interviews, frameworks developed from two phenomenographic studies (Wheeler & McKinney, 2015; Hornung, 2013) were used to frame reflective discussions with students about their learning and their future development as teachers. This data informs our reflections as teachers on the module outcomes.

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Keywords: *information literacy, teaching, LIS education, learning*

The Role of Information Culture on Workplace Information Literacy

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Introduction

In the digital workplace, profound knowledge and competencies in information literacy and its related concepts are increasingly important. Cheuk (2002) and Bonner & Lloyd (2011) have examined workplace literacy in different environments and concluded how workers use and experience of information are dependent on or shaped by the context, such as work tasks, on-the-job experiences, and social aspects. Thus, the role of an organization's information culture influences the development of workplace information literacy. This connection has however not been explored previously.

Objectives

The objective of this paper is to focus information literacy on an organizational level, asking: how information literacy can be supported by the management? This will be explored from an information culture perspective, which focuses the relationship between individuals and information in their work. There is an understanding that values accorded to information, and attitudes towards it are indicators of information culture (Wright 2013). This is an important connection to the information literacy research that more often is focused only on the individual level. The information culture literature underlines the interaction with information within organizations (Oliver 2008). Combining this line of research with information literacy research would improve holistic understanding of workplace information literacy and how such purposeful literacies can be nurtured within an organization.

Methodology

Within the project *Impact of Information Literacy in the Digital Workplace (Academy of Finland 2016-20)* over 1800 scientific papers have been collected from major databases such as Science Direct, EBSCO Host, Google Scholar, Library, Information Science and Technology Abstracts (LISTA), Pro-Quest and Web of Science. As a part of that broader review we focus on literature connecting information literacy with management and organizational culture which will be presented in this paper. As a first step, a collection of 102 review papers was separated from the total number of articles. The publishing period of these articles range from 1974 to 2017. The aim of sorting the review articles was to get a clear understanding of studies conducted on information literacy till date and to get an understanding of how many studies have focused the organizational level of information literacy.

Outcomes

The expected outcome of the literature review is a thorough investigation of current research in workplace information literacy, and with a special emphasis on information literacy, information culture and information management. With this focus we expect to contribute with a more holistic framework, including the role of organizational values, norms and attitudes in a purposeful development and management of information literacy in workplace context.

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Keywords: *information literacy, workplace information literacy, information culture, information management*

Data Literacy and Research Data Management in Poland. Raising Awareness

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Objectives of the Study

There are two main purposes of this study. The first one is to offer a Polish contribution to the international comparative research that has been in progress since the beginning of 2016. In our opinion, data collected in Poland, will widen the context and give additional input to understanding the information users' behaviour and their activities in the field of research data management (RDM). The second purpose is to place this study in the existing Polish context of research information literacy and to apply its findings into the development and improvement of Polish initiatives related to data literacy (DL) and RDM. In Poland, RDM improvement is connected with open data policy improvement; that is why we particularly would like to investigate how this policy transforms the practices of using and sharing of research data (Commission Recommendations, 2012).

Method

It is a quantitative study. The online survey on the LimeSurvey platform was established to collect data. the questionnaire consisted of 25 open-ended and multiple-choice questions, translated from English into Polish. The target groups are doctoral students and faculty employed at the University of Warsaw and Wrocław University of Science and Technology. These two large public universities are highly-ranked, holding the first and second positions, respectively, in the national rankings of universities and technical universities in Poland. These sites were chosen for this research to cover the biggest possible number of fields to be represented in the study. Data will be collected from February to March 2017.

Expected Outcomes

Data analysis and the detailed results of the study will be presented in September. The research is expected to: (1) map of the current DL and RMD situation in Poland; (2) draw academic users' experience and needs in using and sharing data; (3) identify the gaps in knowledge. Moreover, the purpose is to examine differences in understanding RMD by respondents from of many fields and between doctoral students and faculty members as well.

Possible Applications and Further Research Directions

The superior, international expected result and application of this comparative study is the development of data literacy education for the higher education community. In addition, we hope that the study findings will also help produce a set of national guidelines and suggested improvements. Once the needs and gaps are defined, it will help to undertake the initiatives to promote resources optimization on existing platforms, and to raise awareness of DL and RMD.

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Keywords: *data literacy, data information literacy, science data literacy, research data management, scholarly information literacy, Poland*

Seeking Serendipity: the Art of Finding the Unsought in Professional Music

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Although serendipity (i.e., making an unsought finding) is a well-recognized phenomenon in information behavior, it has so far been under-researched in information science. However, recent studies seem to fill this incompleteness and present promising models that (try to) unfold serendipitous processes in (pre-)professional activities. While these 'serendipity models' are meaningful, they need further validation in various contexts. Our study aims to validate one of these models, namely McCay-Peet and Toms' (2015) model on work-related serendipity. This model consolidates previous models of serendipity and includes elements named 'trigger', 'connection', 'follow-up', 'valuable outcome', and 'unexpected thread' that altogether influence the 'perception of serendipity'. We chose to confirm the model in the domain of professional improvised music as it is often associated with unpredictable processes and outcomes (McBirnie, 2008; Wopereis & Derix, 2016). Research questions were: (a) does the model of McCay-Peet and Toms explain how serendipitous (information) behavior unfolds in professional music?; and (b) does it reveal conditions that may influence the process of serendipity within this context?

This study explored serendipitous information behavior of the second author, a professional musician with over 30 years of experience in jazz and improvised music. This musician scrutinized the concept of serendipity in one of his musical projects (Dekker, 2010) and because of his knowledge on serendipity he acted as 'reflection partner' in the initial and final stage of the research project. Data were collected by means of a semi-structured interview that followed the format proposed by McCay-Peet and Toms (2015). The first author conducted three one-hour interview sessions to identify examples of work-related serendipity. Interview data were transcribed and thematically analyzed. We considered each example as case and used the constituents of McCay-Peet and Toms' model as starting point for the analysis.

The professional musician mentioned several cases of serendipity in his professional work of which one was exemplary for making unsought findings in online music repositories (i.e., finding unsought music videos that function as impetus for a new project). Another memorable case was related to a musical improvisation project where renowned musicians from different corners of the world (Tuva, Bulgaria, Uganda, and the Netherlands) worked on a program for a series of concerts. After a day rehearsing it proved to be impossible to work on a preconceived (global) plan due to the different musical backgrounds and cultures. This 'trigger' led to the idea to abandon preconceptions and concentrate on the unique musical expertise of each of the musicians as input for the new program ('connection' and 'follow up'). This approach resulted in a successful program ('valuable outcome'). It even resulted in a new approach of the second author to initiate musical projects: to be less directive and rely on the expertise of fellow improvisers ('unexpected thread' and 'perception of serendipity'). In conclusion, McCay-Peet and Toms' serendipity model proved to be valuable to analyze the musical cases. The paper will elaborate on this finding.

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Keywords: *information behaviour, information seeking, serendipity, music*

Data Literacy and Research Data Management in The Netherlands

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Introduction

Likemost European countries, the Netherlands invests heavily in research data management facilities and support for university personnel. For instance, each university in the Netherlands has its program on these issues that is described in policy documents (e.g., Open Universiteit, 2014). The importance of data literacy and research data management has been acknowledged by the Royal Netherlands Academy of Arts and Sciences (KNAW) and the Netherlands Organisation for Scientific Research (NWO). Together they founded the Data Archiving and Networked Services (DANS) institute in order to promote sustained access to digital research data (Palaiologk, Economides, Tjalsma, & Sesink, 2012). DANS "… encourages researchers to permanently archive and reuse data, e.g. through the EASY online archiving system and the Dutch Dataverse Network. [It] provides access to thousands of scientific datasets, e-publications and other research information in the Netherlands through the NARCIS portal. It also offers training and advice and researches sustained access to digital information. As a data-driven service provider and participant in Dutch and international projects and networks, DANS is working to improve access to digital research data." (Royal Netherlands Academy of Arts and Sciences [KNAW], n.d.). Although facilities and services exist it is not entirely clear how and the extent to which researchers at universities use and appreciate them. In order to extend our knowledge on these issues, we decided to take part in the second phase of a study initiated by Chowdhury, Walton, Kurbanoğlu, Unal, and Boustany (2016). The aim of this study is to fully understand the current levels of awareness and gaps in knowledge on research data management that will help us develop (and/or select) appropriate data literacy training for researchers at universities.

Method

Researchers at the Open University of the Netherlands were invited to participate in an online survey on data literacy and research data management. This survey included 24 questions on demographics (n=5) and data management issues (n=19).

Results and Discussion

Data collection and analysis will be finalized end of May 2017. Results will be discussed during a special session at the ECIL 2017 conference.

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Keywords: *data literacy, data management, research, universities*

Data Literacy Education Design Based on Needs of Graduates in University of Chinese Academy of Sciences

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Objectives

In the new data-intensive research environment, research data is an important part of scientific findings and every researcher will face sophisticated data management problems during their research life, such as data generation and collection, data documentation and processing, data storage and backup, data publishing and sharing. Solving these data problems requires researchers and students to have new skill sets and competencies, which ensure their outputs are accessible, discoverable and reusable. For these reasons, students, both as users and as future creators of data, should be trained to understand how their choices affect access, reuse, and preservation (ACRL, 2013). University of Chinese Academy of Sciences (UCAS), affiliated with the CAS, and National Science Library (NSL) undertake the graduate curriculum education of UCAS. Based on the above background, the objective of this study is to design a data literacy education pattern for graduates of life science in UCAS, involving data literacy curriculum, implementation strategy and service model based on the investigation of graduates' data literacy.

Methodology

Using the online questionnaire survey method, we conducted a data literacy survey among 59 graduates of life science in UCAS. The 12 competencies of Data Information Literacy (Carlson, Fosmire, Miller, & Nelson, 2011) are used as a guide in designing the survey; further consideration is given to research data lifestyle and the specific situation of graduates in UCAS. The questionnaire includes two sections and thirty questions. Section one is about the personal information of respondents (Q1-Q3). Section two involves eight parts: 1) research data basic knowledge (Q6-Q9); 2) data management plan (Q10-Q13); 3) data collection and documentation (Q14); 4) data processing and analysis (Q15-Q18); 5) data management and preservation (Q19); 6) data publishing and sharing (Q20-Q21); 7) research data ethics (Q22-Q23); 8) needs for data literacy course (Q24-Q30).

Outcomes

The current situation and needs of graduates' data literacy competences are revealed. It shows that the graduates are facing complicated problems managing their research data, such as inefficient data retrieval, data screening and data evaluation, and strongly hope to receive data literacy education and training. Based on this investigation, the data literacy education model of teachers, students and curriculum is constructed, the education content is based on the research data lifecycle and includes three levels of learning modes, i.e., basic learning, advanced learning and promotion learning. At the same time, we have also designed data literacy education implementation scenes and service model for graduates in UCAS, and provide several recommendations and programs for libraries to improve their implementation of data literacy education services.

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Keywords: *data literacy, research data management, data literacy course, graduate student*

Academic Reading Format Preferences and Behaviors in Mainland China

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Objectives

Nowadays, using digital devices or tools such as computers, laptops, IPads/tablets, smartphones to read is very normal in China, and schools and universities are offering more and more digital educational resources for students to access. This study investigated format preferences for academic reading and the reading behaviors of Chinese undergraduates, postgraduate students, PhD students and post doctorates, to see whether they like reading academic materials in print or in e-version. We believe that this survey will provide evidence for decision makers and academic library staff for reference.

Methodology

This study conducted in China from March to July 2015, adopted the Academic Reading Questionnaire designed by Mizrachi (2014). The questionnaire was translated into Chinese with a little modification. The Chinese questionnaire has 17 five-point Likert scale ("Strongly disagree" to "Strongly agree") questions, compared to Mizrachi's 14 Likert-style questions. Our targets are Chinese first-class university students. Therefore, we invited higher education students from 33 first-class universities and colleges randomly across 17 cities in mainland China.1165 valid on-line questionnaires were collected.

Results and Discussions

The survey shows a strong tendency of preference for paper or printed materials compared to electronic versions, with this preference considered to relate to memory patterns, notes taking and convenience. 59.39% of students think that they remember information from their course readings best when they read them from printed pages; 80.17% of the students agree that they prefer to have all their course materials in print format. Although English is not the mother tongue for Chinese, still, about 60% of participants claim that they prefer to read in English in print, and 49.44% of students prefer to read in Chinese in print as well. We believe that the reason why most of the participants choose to go with the traditional way of reading in print is that most of the universities in China encourage students to buy printed academic materials for eye-protection instead of electronic ones, hence leading to the habit that most students are used to asking the teachers for books. The preference for printed formats of academic readings tends to appear equally in all the cities. Most of the students think that it is important for them to be able to make notes when reading, while other forms of material fail to fulfill this particular need.

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Keywords: *format preference, reading behaviour, reading habit, academic reading*

Information Literacy for Developing Skills to Organize Advocacy Campaigns in Libraries, Based on an Interactive Communication Model Used in Vocational and Continuing Training

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There are definitions for advocacy in dictionaries, in Wikipedia, in articles, and in books. As a working definition we choose the one given by Steve Tibett, 2007. According to him. advocacy is about change, it is strategic, it is planned and has clear objectives. Advocacy campaigns and communication help to achieve the planed strategic change. The objectives of this publication are (1) to examine if the librarians in Bulgaria know how to organize an advocacy campaign, what additional skills and knowledge they need; and, (2) to find out which interactive training methods couldbe used as an effective model for literacy in the workplace. To achieve these goals we set the following research tasks: to assess the achievements and existing problems of the largest library advocacy campaigns in Bulgaria, usingd modern knowledge in public relations (PR), advocacy, finance, and communication; and, to apply interesting and effective methods for training.

In the study were used printed and electronic sources of information, interviews with managers and librarians involved in the campaigns, and case studies of the best practices in advocacy campaigns to be included in the workplace literacy training. The sample size in the survey was different depending on the type of library and the degree of their participation in the campaigns. It was 50 percent of all regional libraries, about 30 percent for the smaller public libraries, but for libraries in towns and in villages.

We found out which additional skills librarians needed in order to create successful advocacy campaigns. To improve a librarian's ability to plan and evaluate we used the following interactive forms for workplace literacy training: SWOT analysis, brainstorming, case studies, and team work. To achieve improvement of their PR skills to participate in radio or television broadcasting and skills for writing press releases and to produce advertising products for events we used creative and innovative forms like: brain storming, writing together, role play, flipped learning (Kurbanoğlu, S., B, 2017), and learning from case studies. We used the same methods to improve the skills for communication with citizens and municipalities. We applied forms forms of joint training with financial institutions, representatives of the municipalities along with brainstorming and team work tp assist the librarians in acquiring financial knowledge. We found that skills in data evaluation could be taught mainly through practical training, workshops, and a few lectures that could also be offered in electronic form. There is also a need for flexible workplace training to meet the needs of every student who might also want the option of independent writing of projects and scenarios. "The purpose of such model is to transform learning as a "black box" into transparent box the inside which we can see (Mirzianov et all., 2017).

In conclusion, our model of workplace literacy training helps the librarians to make and to implement strategic plans for advocacy campaigns with clear objectives and to improve their communications skills. Our communication model with interactive forms for continuous vocational and continuing workplace literacy training is financed by the National Science Fund of Ministry of education and science of Bulgaria (Contract N05 / 30 3.09.2016).

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Keywords: *advocacy campaigns, communication model, workplace literacy, interactive forms of learning, new competencies in libraries, flipped learning, forms of training*

Civil Commitment and the Role of Public Librarians

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Western culture has developed based on notions that truth, by overcoming falsehood, underpins democracy. Harsin (2015) claims that we are undergoing a shift from a regime of truth to a regime of post-truth (ROPT), where citizens acknowledge that they cannot easily verify a truth claim, causing them to rely on what others tell them to believe, and to engage in debunking the beliefs of others, and counter-claiming. The consequence of such a situation is that people become so immersed in these activities that in their concern with the details of a particular case, they neglect the broader issues of democracy and social justice. According to Rose and Barros we are no longer concerned with creating a consensus of knowledge, claiming "it is no longer a positive attribute to seek out truth, determine biases, evaluate facts, or share knowledge" (2017).

Objectives

Libraries and librarians have played an important part in the provision of information to support democracy and the democratic processes. In this context, the purpose of this study is to explore information services provided by public librarians to support democratic processes in Sydney Australia, and the perceptions that librarians have of their role in supporting the potential of civic literacy. Branson suggests that civic literacy not only increases political participation, but brings with it more tolerant attitudes and the spread of democratic values that contribute to the quality of public policies and democracy (1998).

Methodology

Using a practice theory approach, this study has interviewed the small number of public librarians whose specific role is to provide information services to employees of local governments, elected representatives and to the general public, in order to identify their 'sayings' about these processes and interactions (Schatzki 2012). Questions elicited responses about the ways these librarians describe their roles, the relationship of the information services provided to broader democratic processes, and about current or future possibilities for collaboration with other institutions. They also sought to identify possibilities for supporting democratic processes that librarians might want. The transcriptions of the interviews were analysed using thematic analysis aimed at identifying elements of civil commitment and information literacy.

Outcomes

A regime of post-truth is not yet developing. The uncertainty surrounding local government area mergers and the role of elected representatives may have acted as a deterrent in the development of services to support civic literacy. However, librarians emphasized the importance of awareness-raising of their role in supporting democratic processes. Some perceived opportunities to highlight existing partnerships or to develop new ones; and community discussions of 'fake news' were seen to give scope for repositioning the importance of civil commitment and information literacy.

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Keywords: *civic literacy, local government, public libraries*

Social Responsibility of Society for Elderly People in Information Globalization

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Today, elderly people demand a good system of qualified advisory help to increase their quality of life and provide positive socialization during late ontogenesis. The main purpose of this research is to study the development of programs aimed on increasing information literacy of elderly persons. Methodologically the research is based on the theories of Russian scientists: information globalization and formation of information society by K. Kolin (2006); formation of person's information culture by N. Gendina (2012); activation of creative potential and formation of information literacy of elderly people by E. Kudrina (2015); training of information literacy of elderly people in a difficult life situation by A. Yudina (2015), and formation of cross-cultural literacy of elderly people by M. Mezhova (2015). The challenge of improving a person's information literacy formation is related to getting new content. Manipulation with people's consciousness is performed through mass media and global computer networks. The destruction of traditional national cultures is in a result of information globalization. Elderly people often become the victims of malefactors under different circumstances, violent crimes, and fraudulent actions attracting loss of property. (Kolin, 2006). The social position of elderly people can be alarming. According to the Federal State Statistics Service of the Russian Federation, there were 28.98 million elderly people (20.4 percent of the total population) in 2002. In 2007 this figure had grown to 30 million Russians. By 2016, elderly people accounted for 24.8 percent of the population. Because of the lack of information literacy, elderly people often cannot use the guaranteed social privileges, have difficultyprotecting their own rights, and have little contact with surrounding people. Through an analysis of scientific literature, the social and economic situations, along with personal experiences involving practical activities we are able to identify a number of problems related to the formation of information literacy of elderly people. For this purpose, the University of the Third Age was established as a project for solving the problems of elderly people. Among these problems, we highlighted: loneliness of the elderly person; violence; extremely low level of material security of life; "turning off" from social life; recognition of "uselessness" of the elderly person; and prevalence of estimates of elderly people as consumers in poor society. In the frame of this project we developed curriculum on: 'Information literacy', 'Health', 'Gardening', 'Culture and art', 'Folklore and folk art'. The most significant curricula was Information Literacy that was aimed at increasing the level of information literacy of elderly people. The loss of free time amongst elderly people has led to decreased social and psychological tension in families and a reduction in time spent in relationships with younger generations. Elderly people need opportunities to expand their focus of interest and to make new contacts. Results of implementation of the project were evaluated by criteria that would characterize the elders' received abilities, knowledge and skills. These related to healthy lifestyle; adequate reaction to own emotions and emotions of other people; determination of interests; leisure preferences; organizing of personal security; computer knowledge; and estimation of the accuracy and reliability of information. In 2016 within implementation of the project 80 elderly people were trained. Data of the analysis of results of the project demonstrate that the level of information literacy of participants of the project has increased by not less than 50 percent. Thus, the problem of searching technologies for social responsibilities for elderly people remains still urgent in the conditions of information globalization. Implementation of the project has practical value in the future and can be applied in activities of educational and social organizations.

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Keywords: *elderly people, information literacy, social responsibility*

Children's Literacy is Important, but what about Adult Reading Literacy?

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We are proposing a study on adult reading literacy (RL), a concept closely related to information literacy (IL) and very influential in IL development. Our study is inspired by our recent national project on RL and its contexts, which we found to be primarily linked to educational and cultural policies, of which libraries are an important part (Zaključno poročilo... 2016; Vilar & Haramija 2016; Haramija & Vilar 2017). This research has provided information on many and complex factors influencing the level of RL and IL, especially of children and young people in Slovenia. However, the level of RL of the adult population, especially its background, is much less investigated. Current research results, gathered in the recent OECD PIAAC study, indicate that the level of adult RL in Slovenia is not as high as we would like (Skills matter, 2016), which could in the long-term lead to social and economic consequences as well as hinder the principles of democracy and active citizenship.

We plan to investigate the factors connected with the RL of adults. The study will be threefold:

1. investigation of their experiences with past and current promotion of reading, attitudes regarding reading, family literacy and RL
2. investigation of the practices and experiences in lifelong learning and related competences which are influential in the development and maintaining of RL and IL
3. further investigation of the RL factors investigated in the OECD PIAAC study: content, cognitive strategies, contexts.

We will use an online survey with various types of questions: single/multiple choice, Likert-scale, ranking, open-ended. Our sample will be purposive (snowball-type) and will try to include adults of all ages, genders, educational and social levels and roles, and living places.

With this research we aim to gather information on:

- how adults perceive and utilize reading in its various forms and contexts,
- what are their attitudes towards the promotion and promotors of reading and RL (such as schools, libraries),
- what practices of lifelong learning and reading culture are present in the society,
- which contents, contexts of RL are most/least present and
- how developed are various cognitive strategies related to RL.

Our findings will be informative for researchers and teachers in the field of literacies as well as planners of national educational and cultural policies.

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Keywords: *reading literacy, information literacy, adult reading literacy, lifelong learning, Slovenia*

Data Literacy as Requirements for China's Library and Information Profession: a Preliminary Research on Recruitment Data

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With the advent of big data era, more and more Chinese institutions require their employees to process and manage data. It is inevitable that this phenomenon in skill requirements will spread to the field of libraries. Library and information schools (LIS) should track the trend of skills demanded in library and information institutions with the purpose of educating graduates and undergraduates to meet social needs, strengthening LIS students' career competence, and providing career development guidelines for librarians. In recent years, the School of Information Management at Sun Yat-sen University has launched a long-term research project on the development and transformation of LIS profession. One of the core programs of this project is to study changes and trends of qualifications for library and information staff based on want ads with a particular interest in data literacy and related requirements from employers.

In the literature review, we stress the research on job announcements as a tradition in LIS. While pointing out characteristics of job ads in China, we establish a new approach to collect and analyse relevant information by crawls and manual process. The article provides a preliminary outcome of this project, using content analysis as a method to study recruitment data from November 2016 to January 2017. The framework of content analysis comes from earlier research on Data Competence Framework (DCF), and in this period, 358 positions from 147 libraries and related organizations posted online, 66 of which meets at least one competence index of the DCF. We also discuss the source, distribution, regional difference, and requirement details of these positions.

The study finds that: (1) Libraries and information institutions of different types and across various regions are becoming more interested in data literacy and related abilities of their future employees. (2) The increasing emphasis on data literacy is reflected not only in the incremental number of data-related positions, such as technical librarians and database administrators, but also in the new requirements for positions traditionally regarded as non-data related, such as reader services, resource management, and others. However, although the demand for data literacy has emerged in the library profession, Chinese library schools only show limited educational support for such area.

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Keywords: *data competence framework, data literacy, chinese library profession, talent demand*

DOCTORAL PAPERS

Librarians' Understanding of Information Literacy in Academic Libraries in Bulgaria: a Case Study

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Objectives

This study aims at illuminating a culturally situated understanding of information literacy (IL) contextualized by a particular *landscape* in terms of a specific geographic region with related socio-cultural characteristics. The qualitative central question is how do Bulgarian academic librarians understand IL. Information literacy (IL) has signified a practical and strategic concept to information professionals since its emergence in the 1970s. IL encompasses the ways we discover, value and use information. The understanding of IL defines the frameworks for teaching IL in academic settings and impacts pedagogy. The body of literature suggests that IL understanding may vary in different parts of the world depending on factors such as historical perspective and socio-cultural characteristics (Bruce 1997; Špiranec & Pejova, 2010; Whitworth, 2014). Hence, existing frameworks and best practice models from abroad cannot be copied or nested into IL policies. IL scholars in some Central- and East-European countries are addressing the specific socio-cultural contexts (Koltay, Špiranec, & Karvalics, 2016).

Methodology

This qualitative study embraces the *constructivist* worldview through the lens of a socio-cultural theoretical framework. It follows Vygotsky's notion that *understanding* is social in origin and the development of knowledge structures and knowledge formation in general take place within socio-cultural contexts. The intent is to explore and generate insights into librarians' understanding of IL by employing *instrumental (*with *exploratory* and *ethnographic* elements) case study (Simons, 2009). The research design includes: field observations and analysis (field notes on information environment and activities in three different types of academic libraries), unobtrusive data set(s) collection and examination (such as publications by Bulgarian academic librarians; handouts and flyers; publications from professional organizations; grants and corresponding findings or developments); artifact analysis (websites, tutorials), and in-depth interviews with 15-20 Bulgarian academic librarians. I plan to report on a pilot study to be conducted this spring.

Outcomes

The intrinsic quality of the IL agenda is embodied in understanding and utilizing "the power of effective information use in all social and cultural contexts" (Bruce, as cited in Whitworth, 2014, p.b.c.). This study on information literacy understanding among Bulgarian academic librarians will add to the international pool of knowledge in the field and address the need to apply culturally grounded approaches to IL to better serve specific groups. Also, the study will benefit Bulgarian academic librarians by providing a view of their understanding of IL and possibly facilitate further inquiry into suitable framework and practices.

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Keywords: *information literacy, academic library, Bulgaria*

The “Real World” Relevance of Information Literacy

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Research has documented that “the most prominent and consistent determinant of information literacy is student perception” (Poll & Payne, 2006, p. 132). This doctoral study aims to learn student perceptions of the relevance of information literacy competencies applied to academic work. The study also intends to learn what students identify as factors that make information literacy relevant. This paper presents preliminary findings providing new insights for improving pedagogical work, supporting academia goals such as retention and completion, and improving how to communicate the value of information literacy competencies as transferable competencies to the “real world”.

The information literacy competencies in this study are mapped to the Association of College and Research Libraries Information Literacy Framework (2016) and Standards (2000). When considering the user-view, relevance is identified when information has meaning or is meaningful in relation to context - such as academic work (Cosijn & Ingwersen, 2000; Saracevic, 1975, 1996, 2007). Socio-cognitive relevance is the perception of something being useful and meaningful (Borlund, 2003). Using the theory of relevance as a framework, this study aims to contribute to the growing literature in information literacy and the nascent space in information science literature on socio-cognitive relevance (Wilson & Sperber, 2004; Hjørland, 2002, 2004, 2010).

Using a pragmatic epistemological and methodological approach, the research design includes a cross-sectional mixed-methods two-stage sequential study. Stage one uses an online survey to gather quantitative data on undergraduate *student perceptions* of the socio-cognitive relevance of information literacy competencies when applied to their academic work. Stage two uses focus groups to gather qualitative data to identify the *factors* that make information literacy competencies socio-cognitively relevant to academic work.

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Keywords: *information literacy, information literacy framework, socio-cognitive relevance, user relevance, higher education, academic work, threshold concepts*

Evaluate Information: Using Web 2.0 Tools to Support Critical Thinking Development Through Literacies on Post-Secondary Students

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Since the development of information and communication technologies dand its astonishingly rapid improvements, infobesity tends to become a challenge to cognitive management. In a few decades, the growth of information resulted in the dismantling of the traditional model, until an almost total situation of "cognitive market" deregulation (Bronner, 2009). In addition, we can be concerned by the "disintermediation" phenomena (Špiranec, 2014), which is defined as the ability to bypass intermediaries and directly gain access to information (Eysenbach, 2007). Nowadays, every student can access an impressive mass of information without filters. Furthermore, input of online peers is becoming central with social media.

Considering this context, many authors like Siemens (2004) or Downes (2008) have been proposing a connectivist theory for over 10 years. It postulates that "evaluating information prior to engaging with that information is a meta-skill that [should be] applied before learning begins". On the other hand, social cognitive theory offers a framework to interpret regulation mechanisms, both in terms of social regulation and self-regulation strategies as a product of metacognition. In this sense, they may have a direct impact on learners' critical thinking development.

Consequently, our research will try to address many objectives. First, we would like to push forward the contribution of knowledge building within modern literacies, especially within the metaliteracy proposal (Mackey & Jacobson, 2011) which suggests teaching to "evaluate dynamic content critically" (Mackey & Jacobson, 2011, p. 70). To this, our submission will present how we foresee testing the connectivist approach, not as a new learning theory but mobilized as a new "praxis-oriented" learning approach. To understand how and where students develop evaluation skills linked to these metaliteracy, particularly in terms of critical-thinking, a social cognitive epistemology will be used. Finally, we would like to offer to the educational environment some tools to support learners, especially about plagiarism and the problematic of quality of sources.

Using a mixed methodology applied to three classrooms in France and Quebec, we will try to describe how we can observe behaviours which reflect mental and internal processes. Instrumented observation technics will be used to collect data, including navigation logs and eye tracking. To objectify potential causal linkages, we will compare three situations: without proof of prior literacy education and training, an awareness to metaliteracy without mobilizing a connectivist pedagogy and, finally, an awareness to metaliteracy in a connectivist pedagogy. In addition, qualitative research contribution will also help us examine how social interactions could support cognitive mechanisms.

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Keywords: *connectivism, information literacy, metaliteracy, web 2.0, social media, critical thinking, evaluation*

A Different Tribe? Teachers and School Librarians Working Together in Five Finnish Schools

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My presentation summarises the last empirical part of my doctoral research: interviews with five school librarians and five teachers in Finnish university schools, where teachers are educated. The interviewees were asked about their collaboration as well as conceptions around information literacy and information seeking.

The new national core curriculum will take effect in secondary schools in August 2017. The new core curriculum emphasizes cross-curricular learning and phenomenon-based learning, which is similar to research-based learning in terms of methodology. This type of learning requires more refined information literacy skills and deeper information seeking skills. Collaboration with the teachers and the librarians would be a natural union.

Montiel-Overall (2005) has studied the collaboration between teachers and librarians and discovered there are four levels in collaboration: Model A: Coordination; Model B: Cooperation; Model C: Integrated Instruction; and Model D: Integrated Curriculum. Smith (2013) studied the information literacy understanding of secondary school teachers and found that the understanding of the term varied significantly.

This part of the doctoral research seeks answers to questions two and three:

1. How are aspects of information literacy present in the two consecutive national core curricula?
2. How do teachers and librarians conceptualize information literacy?
3. What differences or similarities are there to be found between teachers' and librarians' conceptions and those present in the core curricula?

Seven of the persons interviewed were female. The educational level amongst them ranged between doctoral and vocational education. Half of the respondents were age 51-65. The results are divided into two parts: how information literacy and information seeking is seen and what kind of collaboration exists between the teachers and the librarians in these five schools.

The term information literacy was somewhat unfamiliar to both interview groups. The understanding of information seeking, however, was very much the same between groups. Information literacy was additionally understood to be very similar to information seeking. Several teachers started to analyse information literacy in an etymologic style to make meaning of the term. The case was similar with some librarians as well.

The results show a very traditional way of conducting school library work. The teachers and the librarians have very different professional identities. Three out of five school librarians said directly they have not acquainted with the core curriculum at all. Collaboration was more or less limited to presenting printed materials according to the teachers' subject wishes. Library instruction was taught by the school librarians, but was limited to teaching how to use the school library database.

The results, therefore, support the findings of Smith (2013). The collaboration was found to be on the level of coordination on Montiel-Overall scale of collaboration. The interview results indicate only a little support of the research-based activities expected in the new core curriculum of 2014. It would be important for the school librarians to also know the contents to support the teaching in schools.

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Keywords: *Finland, information literacy, school libraries, librarians, teachers, collaboration, curriculum*

Information Literacy in Turkish Education System

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One of the main objectives of education is to ensure lifelong continuity of knowledge and skills acquired through formal education. Education systems and environments have been changed due to the proliferation of information and developments in information technologies. Changes in education systems require students to be equipped with new skills such as information literacy skills.

Among the 21st century learning skills, problems solving, effective evaluation of information sources, utilisation of information, and the production of new information seem to be the most important skills that students need in order to be prepared for the future. The creation of educational experiences is only possible with a curriculum (Hannesdottir, 1982, p.29). However, the biggest problem of the education system of the 21st century is insufficient action research in school, non-application of critical thinking in education strategy, and the absence of a specialist researcher (librarian) (Hockersmith, 2010, p.49).

Today, the importance of the above-mentioned skills is increasing because these skills are required for the reproduction of information. Thus, if students cannot gain information literacy skills until the end of their compulsory education, the chances of climbing up the business and career stages will most likely be diminished for them (SCANS, 1991; Önal, 2012, p.101). As a result, Information literacy skills are necessary and compulsory skills for success in education, work, and everyday life. So, this puts a big responsibility on the shoulders of teachers and school librarians to equip students with the skills of information literacy (Kurbanoğlu ve Akkoyunlu, 2009, p.3).

The majority of the state schools in Turkey have neither a school library nor a school librarian. Consequently, most of them are inactive. This situation leaves the responsibility of teaching information literacy entirely to teachers, who are limited by the scope and requirements of the national curricula.

This study is a part of an ongoing doctoral dissertation. The main aim of this doctoral research study is to find out to what extent national curricula addresses information literacy. With this aim the content and the scope of curricula will be evaluated, all strategic plans and documents regarding the national education system will be examined, and a survey will be conducted to investigate information literacy levels of teachers and students. Research will be carried out through the utilization of descriptive and content analysis methods. The data related to teachers and students will be selected through the survey method. The survey sample will be composed of 342 students and 200 teachers working in a total of 11 science high schools within Ministry of Education in the district of Ankara, the capital city.

With this aim, the research will be composed of several sections. The literature review will focus on the importance of information literacy and its integration into curricula of secondary education, along with a detailed review of research in this area and the current situation in Turkey. Data collected through content analysis of curricula and strategic documents. as well as through the surveys, will be analysed and presented. Conclusions and recommendations will be drawn. In the doctoral forum, the situation in Turkey based on content analysis of strategic documents and national curricula will be presented.

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Keywords: *information literacy, Turkish education system, integration of information literacy with curriculum*

Information Literacy in the Workplace: A Conceptual Approach

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The concept of information literacy has long been debated in the literature because the way it is understood and applied differs from one individual, one organization, one profession, and one context to another. Information literacy has had varied connotations from its first usage. As a result, there has been numerous definitions and a resultant ambiguity. Undoubtly, the concept is still evolving. Alexandria Proclamation (NFIL, 2005), for instance, makes a connection between information literacy and workplace by indicating that information literacy "empowers people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals." Today there is evidence that employers are looking for graduates who are information savvy, in other words, who can search information online, seek information in print or from their colleagues, extrapolate, and evaluate information (Head, 2012). The literature on workplace information literacy is growing. There is consensus that information literacy is among the key competencies for success in the workplace (NFIL, 2016) and it differs from information literacy in educational settings (Goldstein, 2016; Williams, Cooper & Wavell, 2014; Lloyd, 2013). Information literacy in the workplace is rather context-specific (Goldstein, 2014). The nature of the sources used in workplace and professional contexts differ from traditional sources (Williams, Cooper & Wavell, 2014). The workplace and associated information needs are often less linear, less predictable, and more open-ended; information needs vary according to different employee roles and levels of seniority within organisations (Lloyd, 2013; Goldstein, 2016). A definition of information literacy has been adapted for the workplace by Cheuk (2008) as "a set of abilities for employees to recognize when information is needed and to locate, evaluate, organize and use information effectively, as well as the abilities to create, package and present information effectively to the intended audience…. it is a set of abilities for employees to interact with information when they need to address any business issues or problems at work." The aim of this paper, as part of the theoretical background of a PhD study, is to examine the concept of workplace information literacy closely. This is a descriptive study based on a literature review for workplace information literacy. It is aimed to make connections and distinctions between workplace information literacy and related concepts such employability, knowledge management, organizational information behaviour, and information seeking behaviour in the workplace. The common points will be explained and distinctions will be determined by examining past studies.

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Keywords: *workplace information literacy, employability, knowledge management, organizational information behavior, information seeking behavior*

Information Literacy of Elderly People: Bridging the Digital Gap

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Purpose

The aim of this paper is to present the results of a qualitative study which is focused on the use of information technologies by senior citizens in the Czech Republic. The findings describe the first part of more extensive research. The results offer a unique insight into the situation which is terminologically described as a secondary digital divide. The research is a part of a doctoral thesis oriented to elderly people and their information literacy skills. The outcomes of the semi-structured interviews will be presented within this doctoral paper.

Research background

The extent and the nature of the secondary digital divide depend on the use of technology, not on technological access (Van Dijk, 2005). The term digital divide initially referred to gaps in access to a computer. If only by effects of saturation or possession, these gaps will more or less close. However, it is shown that differential access to skills and usage is likely to increase. When the internet diffused rapidly into society and became a primary type of computing, the term shifted towards gaps not only in computer skills, but also in internet skills (Van Deursen & Van Dijk, 2011). The growth of a usage gap is projected primarily between people who are able to find and use requested information effectively and those who are not.

The ability of the elderly people to participate adequately in the information society is dramatically reduced without the knowledge of technologies and information literacy. The greater part of the population communicates using modern technologies, thus the greater the disadvantage of not using these technologies because of insufficient user skills (Van Dijk, 2005). Lack of user skills can also mean a risk of non-compliance with the principles of information security and may cause a real danger for these citizens. Therefore, seniors should have the opportunity to get educated in information literacy which is not only focused on basic computer literacy, but also designed to reflect their needs and based on the information literacy standard (MIL). Due to the dense library network in the Czech Republic, libraries might play a crucial role in this type of continuous education.

Methodology

The qualitative data are gathered using the method of semi-structured interviews. The research question is what topics and knowledge are important and helpful for elderly people. It is not possible to determine the needs without the research. The purpose of the qualitative research is thus to recognize and describe which topics the senior people are interested in, what is their motivation to use the internet, and how and why they are searching for the information. Nine people over the age of 65 possessing basic computer skills participated. To select the research sample, the non-probability method of purposive sampling, combined with self-selection sampling was chosen. . The research defines the senior citizens' fields of interest and the level of their searching skills. The interviews were conducted during the spring 2017. The results will be used as a foundation for follow-up research and thematic methodological purpose of information literacy lessons.

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Keywords: *information literacy, senior citizens, digital divide, information and communication technologies*

BEST PRACTICE

Information Literacy in Inclusive Education: a Team Teaching Concept at the TU Dortmund University by German Studies and Special Education

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There is a desideratum in two areas regarding didactical approaches concerning information literacy: Inclusion and media education. Digital media can facilitate individualised and cooperative learning. Additionally, digital media can be used to promote inclusion. But which factors influence the acquisition of Information Literacy in Inclusive Education? Comparative international studies such as ICILS 2013 (Bos et al. 2014), show how social challenges like participation and handling heterogeneity at school, can be addressed through media (Bosse and Pola 2017). In numerous studies (Bos et al. 2014,) it becomes apparent that German teachers are lacking knowledge in regard to individualised support and transfer of information literacy. They do not see the potential of digital media, especially for the improvement of learning opportunities for individuals with diverse learning requirements and they are not able to apply digital media appropriately in their lessons (Bosse and Pola 2017). Teachers need to be qualified to design modern education with accessible media. In Germany the ratio between available computers and pupils (1:4) is far better than the ratio between teaching with and without computers. According to the teacher's own reports, only 9 percent of teachers are using digital media on a daily basis. Approximately 40 percent use digital media seldom or never (Bos et al. 2014). It seems that the cause is a skeptical attitude towards media among teachers, especially in Humanities. This may result from missing didactical competences regarding digital media. To decipher something is a new challenge for teachers. Facing this framework, the Institute for German Language and Literature and the research cluster Technology for Inclusion and Participation at the University of Dortmund collaborated to design lectures. The prospective teachers should become familiar with this way of cooperation (Höft & Marci-Boehncke 2017). Already for four years of lectures are designed by a teaching team from these two departments. Inclusive teaching and learning in different contexts is practiced as well in tutorials with practical approaches. In tandem the students develop a learning situation at school or at extracurricular institutions which they then present. The presentation focuses on the concept, its teaching and learning conditions, and competence orientation as well as opportunities and limitations.

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Keywords: *information media literacy, inclusive media education, e-inclusion*

Leading Together: Harnessing the Community College Atmosphere to Impact Student Learning

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A growing southern New England Community College has become a leader in transformative instruction initiatives. Not only have they seen a 45% increase in library instruction, students are seeking research assistance more than ever before (over 113% over the previous year). With forward thinking librarians and faculty, this community has embraced alternative methods of instruction that incorporate faculty-librarian collaborations and one-on-one student support outside of the classroom. The community college offers a unique ability to affect change, and the library has risen to the challenge with multiple-sessions, pop-up libraries, and one-on-one appointments tailored to the students' needs.

Objectives

This session will focus on the collaborative efforts of the librarians at this community college, highlighting their campus leadership and innovations. The librarians will describe outreach efforts to faculty and students, illustrating how the unique environment of a small campus can help to build a strong and cohesive learning community.

This community college has four campuses, each with a distinct and unique student body. Ranging from a suburban environment to an urban downtown setting, the librarians have all had to adapt to their unique circumstances. While there are differences in the campuses, these librarians have maintained a cohesive approach to information literacy, leading their faculty to embrace new methods of instruction. Librarians offer not only basic library research skills, but also focused workshops on synthesizing resources, the peer review process, and citations.

Methodology

Librarians at this community college have led the charge in efforts of retention, bringing more students into the library by going where they are; pop-up libraries, traditional reference, and increased marketing have significantly raised the profile of the library, letting students know that librarians are there to support their research efforts. These outreach efforts have resulted in a 113% increase in Book-A-Librarian (one-on-one) research appointments. The community college has experienced one of the highest rates of library instruction, a 45% increase over the previous year. Students are also coming in to the library more often, utilizing library resources and services.

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Keywords: *community college, innovation, information literacy, outreach*

Leveraging Partnerships to Assess Library Impact on Undergraduate Student Learning Via a Longitudinal Study

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Formative and summative assessment are traditional and effective methods of determining library impact on student learning, However, in the US, they are usually confined to a one-shot information literacy instruction (IL) session. One way to gain more information is to track students along their college career and into their graduate program to determine if they are retaining IL skills. The results of an ongoing longitudinal study of students will be presented.

The Ronald E. McNair Post-Baccalaureate Degree Achievement Program prepares eligible students from disadvantaged backgrounds with academic potential for doctoral studies. Toward this end, McNair scholars at Rutgers University participate in a Basics of Research course (spring semester) and an intensive Summer Research Institute thatincludes the Bibliography & Research Techniques course taught by library faculty. Starting with the summer 2015 cohort, the library is participating in a longitudinal study to ascertain library impact on student learning via this program.

A study from Project Information Literacy (Head 2013, p. 40) has indicated that students in US colleges and universities have expressed frustration with research. The author is seeking to find answers to the question, Do McNair students retain research skills toward their ultimate goal of pursuing a doctoral degree? In the second year of this 5-year study, 2 cohorts have been tracked through to their undergraduate courses and will continue into their graduate programs. The study will investigate whether the experience of IL classes in the spring and in the Summer Research Institute equip students with IL skills that will make them act like strategic researchers when tackling a future research need while as undergraduates and beyond. It will also seek to gauge whether students continue to engage with librarians in other academic institutions as they continue into graduate programs including terminal degrees. The results and conclusions drawn from Pre- and Post- tests and surveys will be shared. Initial findings indicate that students are retaining the skills from Spring to Summer and into the Fall of the same year. Further, 70 percent of respondents acknowledge an increased level of confidence when interacting with a librarian.

The Ronald E. McNair Post-Baccalaureate Degree Achievement Program tracks its students through completion of their undergraduate degree and for ten years following graduation. This provides an opportunity for the library to assess the impact of LI on the learning of several cohorts over time. Proving long-term benefits of library interaction on student preparation and success for graduate studies and doctoral research can influence the longevity of the LI program. Specifically, the instructional tools and methods can guide the creation of learning objects and implementation of various active learning strategies in IL instruction contexts.

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Keywords: *partnerships, collaborations, information literacy, student persistence, post-graduate information literacy*

Evaluation! Telling Real from “Alternative” Facts

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“*In an era of fake news, false equivalence, and too much fluff, let’s take a stand together to demand better, and bring attention to all those doing great work.*”

Dan Rather – 9 January, 2017 https://www.facebook.com/theDanRather/posts/10158021167625716

Introduction

How is it we as information literacy professionals can take a stand? Evaluating Information! In this post-fact reality where anyone can post the true, the half-true, and the outright untrue online information literacy instructors all agree that the ability to evaluate information is critical to being an informed person. Yet it remains one of the most difficult skills to teach. If you are teaching an information literacy course that spans a number of weeks there are many opportunities to teach and reinforce evaluation skills, but many librarians and other educators only have one opportunity to teach their audience these skills. Is a one-size-fits-all approach possible? Is there a way to create a plan that can be expanded or contracted based on time constraints and audience? If it’s possible this would benefit everyone who teaches evaluation.

Objectives

- Show audience how to develop an evaluation lesson plan for both a 16-week and a one-shot course.
- Provide audience a framework that can be adjusted for varying audiences and timeframes.

Methodology

We will show how the lesson works in the 16-week course and how it works in the one-shot course so that audience members can understand how to fit these plans into their teaching situations. These lessons have been successfully taught with an urban population and a much more rural population. Both student populations were heavily comprised of minority students who are first generation college attenders.

Outcomes

Instructors and/or librarians will be able to develop an evaluation lesson plan for information literacy instruction, adjustable for varying timeframes and timeframes.

Keywords: *information literacy, instruction, evaluation, best practices*

Information Literacy Skills for Incoming Exchange Students: Introducing a New Mandatory Course

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Hanken School of Econimics is a small internationally accredited university that has international collaboration with partner universities from around the world. Hanken is the first university in Finland that has introduced a mandatory exchange semester for its degree students. International relations are highly valued and therefore Hanken also receives about 160 incoming exchange students every year to its two campuses in Helsinki and Vaasa.

Objectives

Since 2005 Hanken has developed a comprehensive information literacy program for its degree students (Hanken Library 2016). Reference technique, library databases and search methods are taught to all the students during their first year of studies. This has made the teachers raise their grading standards when it comes to written assignments. The International Office however, noticed that many exchange students dropped out of courses or performed poorly. Moreover, cases of plagiarism were reported. Although our international partner universities are of high quality, some students had no previous experience writing papers, using reference techniques or searching in library databases. As a result, the Office of Study Affairs, Centre for Research and International Affairs, and the Library decided to introduce a mandatory orientation course that includes a module in information literacy.

The Course

A new mandatory orientation course for exchange students was introduced in autumn 2016. The existing three-day orientation course was extended so that an information literacy module that consisted of classroom instruction and a written assignment was added. Upon completion of the course the students received 1 ECTS. The information literacy module was taught by library staff in computer labs. The students learned the basics of reference technique, writing academic papers and using library databases. Search methods and evaluation of sources was also discussed during the sessions. Additional self-study materials were made available online. The assignment for the course was a short essay that consisted of two parts. In the first part, the students had to write a text with references on a freely chosen topic that was related to Finland, and the second part comprised of self-reflection over the expectations from the exchange period. The course was graded pass/fail and the students were offered an opportunity to improve their paper after the first round of grading.

Outcomes

In autumn 2016 all exchange students passed the course either at first attempt or after making changes to their paper. There were less dropouts from subject courses and no cases of plagiarism were reported. Several teachers gave positive feedback on exchange students' work. According to an annual exchange student survey the students' satisfaction rate with their exchange experience, the courses at Hanken, the services of the International Office and Hanken Library had improved significantly in autumn 2016. The amount of exchange students who reported to be very satisfied with library services increased from 37 to 67 percent compared to autumn 2015. The introduction of a new mandatory orientation course has been successful in improving exchange students' information literacy skills and enhancing their study experience at Hanken.

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Keywords: *information literacy, incoming exchange students, academic libraries, Hanken School of Economics, best practice*

Don’t Get Faked Out by the News: Becoming an Informed Citizen

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Mass media, particularly the news, influence millions of people daily. Particularly as media outlets increasingly communicate their message to narrow target audiences, people can stay in their information “comfort zone”, and not consider different points of view. Because the news can be misleading, people need to consciously and critically analyze and evaluate mass media messages, and then decide their response step. This reflective process also helps people study the stimulus-impulse cycle so they can think before they act. Otherwise, they will not make reasoned decisions, and they will suffer the consequences of their narrow-mindedness or ignorance.

What then is media literacy? In the United States, media literacy focuses on the idea of mass media, such as news: its purposeful means and end of production. The Center for Media Literacy (2015) developed core concepts related to media messages: people need to consider the process by which the message is made, the message’s content and framework, and the production value of the message. This process is certainly core to news and possible fake representations.

Librarians have unique skills to help people in this process because they evaluate and work with all kinds of information in various formats (Rheingold, 2012). Mass media has not been integrated well into traditional curricula, so information professionals, librarians should seek out opportunities to provide media literacy tools to empower people.

Mass media literacy fits well under the umbrella of information literacy, and news provides a concrete basis for discernment (Kahne, Lee & Feezell, 2012). Librarians can help their clientele to:

- Identify media’s purpose and strategies, noting how format impacts the message;
- Act as a “fact-checker” to determine the quality and relevance of new sources;
- Identify news’ main ideas, accuracy, authenticity, point of view, facts vs. opinions, and strength of argument.
- Observe how media disseminate news, and participate as citizen journalists (Deuze, 2009).

Other specific strategies include critiquing historical fake news and hoaxes, reading news from different points of view, comparing different news sources covering the same story, and creating their own fake news.

This paper explains media literacy, points out ways that news can be misleading and distorted, and suggests more ways that librarians can help workers be news savy and media literate rather than be faked out by the news.

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Keywords: *ICT literacy, digital citizenship, website evaluation, critical thinking, media literacy*

Content Curation for Information Literacy and Knowledge Management in Research Settings

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Knowledge management is an old concern but is becoming more and more crucial in the context of 'infobesity'. Information literacy of students and trainees in universities remains poor and requires education to make them independent and life-long learners according to OCDE/UNESCO requirements.

Content Curation tools have developed widely during the past years. They allow finding, selecting, elevating and sharing specific and relevant information, adding human specialist value compared to algorithmic standardized engines.

We report on usage of the curation tool Scoop.it for managing "serious" information, focusing on teaching and learning Immunology and related fields in higher education, according to the following research settings:

- Research in universities, basis of training of students, from master level to PhDs and postdocs;
- Research in public or industry laboratories.

Using this tool, it is possible to create, individually or as a group, editorialized web magazines and to build searchable Content Hubs (focused and dedicated topic contents databases), both in an attractive format.

Finding information using crawling engines, combined with interest groups, social networks (Facebook, Linkedin, Twitter…) is easier and wider than with previously usable dedicated tools. Furthermore, collection of information in the cloud allows retrieving it again months or year later.

Implementation of Content Curation in Universities and Research Centers provides, in the context of blended-learning projects:

- benefits for teachers or researchers end-users such as (1) on top of keeping abreast of information and personal continuous e-learning and education (2) joining a network of specialists and communities of interest at a global level (3) building leadership in a field.

It also provides:

- benefits for student end-users and trainees such as (1) becoming information-literate and able to surf the information wave (2) building personal content hubs and portfolios for personal research for master and PhD training (3) preparing for future professional applications either in University, research centers or industry.

Challenges (human dependency, permanence of tools, management and assimilation of information, individualism) exist but opportunities supersede them:

- new ways of teaching disciplines in a context of blended learning;
- helping students mastering information techniques and practices;
- stimulating curiosity to create serendipitous new ideas for research.

Keywords: *information literacy, content curation, knowledge management, research, infobesity*

Professional Development for IL Practitioners: a Case Study

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Objectives

This "Best Practices" session will outline a collaboration between University of Alberta Libraries (UAL) and the Centre for Teaching and Learning (CTL) at the University of Alberta. UAL has a robust information literacy program, comprised of course- and program-integrated instruction, drop-in workshops, an online presence in the UAlberta online learning management system, and a variety of online tutorials and guides. In 2014/2015, UAL librarians and staff taught over 580 classes to more than 18,500 students, faculty, staff and community members. Given UAL's commitment to information literacy and UAlberta's strategic focus on teaching excellence, in Fall 2015, UAL established a collaborative partnership with CTL to develop a professional development program for librarians. While some UAL librarians have education backgrounds, many have developed their instructional skills on the job, while others - including interns, library residents and new librarians - come to the role with initiative and interest but limited experience. CTL works with individual instructors at all levels and in all disciplines to develop the best instruction possible. In addition to this one-to-one approach, CTL offers professional development workshops (faculty-specific and university-wide) and collaborates with departments to develop the best teaching and learning experiences in and outside the classroom.

Methodology

In Fall 2015, UAL approached CTL to explore options for providing a professional development program for librarians. UAL's Teaching & Learning Committee worked with CTL's Associate Director for Curriculum to survey librarians' professional development needs. Based on survey results, program priorities were established for 2016 and 6-8 workshops modelling best pedagogical practices and approaches were delivered. This work is one example of a broader trend which sees academic libraries collaborating with Centres for Teaching and Learning to advance mutual interests (Bolan, Bellamy, Rolheiser, Szurmak, & Vine, 2015; Laverty & Stockley, 2007; Queen's University Library, 2017).

Outcomes

Formative and summative feedback was gathered both formally and informally from session participants which helped shape future program offerings. Additional input was solicited to assess how participants were using new approaches and techniques in their instruction sessions. We will present feedback profiles of session participants and describe how the sessions helped inspire pedagogical shifts in their teaching practices.

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Keywords: *librarian-faculty collaboration, professional development, scholarship of teaching and learning*

The Tortoise *or* the Hare: Undergraduates, Information Literacy, and the Slow Movement

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According to Aesop, "slow and steady wins the race." However, with the advent of the internet, federated searching, electronic books and articles, and library marketing, the moral of Aesop's famous fable no longer seems relevant to undergraduate student researchers. Several studies (Connaway, Dickey, & Radford, 2011; Poirier & Robinson, 2014; Savolainen, 2006) indicate that time is a major factor for many information seekers. Satisfaction seems to be embedded in "quick and easy" rather than "slow and sure". Unfortunately, this is at odds with several dispositions and knowledge practices listed in the Association of College and Research Library's information literacy framework. These guidelines support the emergence of increasingly sophisticated search practices and the development of perspective, both of which require a slower, more reflective approach. Conversely, undergraduate students' temptation toward "quick and easy" research fosters a hollow experience, lacking both time and depth required for the potential enjoyment of an invested research process. Getting caught up in the search, losing all sense of time, and reaching the satisfaction that comes with discovery are among the affective benefits of methodical research, as is "being in the zone" and an academic equivalent to a "runner's high". Learning about subtopics along the way, locating quality resources, and developing deeper perspective on a topic are academic benefits also to be shared with undergraduate students who have yet to realize the great returns of time well invested in a slower and more mindful research process. The challenge lies in convincing inexperienced student researchers of this. This presentation will provide an overview of current research about information seeking behaviors and undergraduate students; it will discuss introducing Slow Movement techniques during information literacy sessions as a "best practice"; and it will discuss pedagogical reasons to orient students to "slow and steady wins the race".

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Keywords: *slow movement, information literacy, information seeking*

Governance and Information Literacy at German Universities

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In 2012 the German Rectors' Conference published the resolution "Higher education institutions in a digital age: rethinking information competency – redirecting processes." In this paper, the rectors and presidents of the German universities focused not only on academic information competency, but also on information competency at an organisational level, which relates to all internal university processes. The recommendation "How university management can guide the development of research data management. Orientation paths, options for action and scenarios" followed in 2015 Both papers show that the university management must adapt structures and processes in the context of internal university governance processes in order to meet the challenges in the fields of information literacy and research data.

This contribution analyzes whether and to what extent German universities have already recognized information literacy as a strategic task and established sustainable structures. It discusses best practice examples for guidelines and policies, for embedding information literacy into the curricula and for teaching information literacy within the context of Digital Humanities and research data management. It presents the results and the final paper of a strategic forum of the German Rectors'Conference.

The contribution also addresses the role of the University Libraries in order to support information literacy. The German Library Association developed the reference framework information literacy for all educational levels. The reference framework consists of the five partial competencies: Search/Evaluate/Organize/Present/Communicate. It contains performance indicators for six competency levels ranging from A1 (elementary information literacy) to C2 (sustainable information literacy). For each indicator and competency level, learning outcomes and practical examples are given. The reference framework corresponds to the strategy "Education in the digital world" of the Standing Conference of the Ministers of Education and Cultural Affairs of the States in the Federal Republic of Germany.

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Keywords: *information literacy, governance, information literacy framework, Germany*

Toolkit to Take to Workplace: Equipping Students for Success Beyond College

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Background and objectives

Library instruction, especially in one-shot sessions, usually focuses on framing research questions, finding sources, and evaluating information. Similarly, online guides tend to highlight search tools and techniques and evaluation of sources by applying traditional criteria. The ACRL Framework (2015) has expanded the definition of information literacy by including creation of new knowledge and ethical participation in communities of knowledge. We thought it was essential to address these competencies in instruction, especially in view of publications (Monge & Frisicaro-Pawlowski. 2014) and studies (Head, 2012; Head, 2016) that point at the discrepancy between information literacy instruction provided in college and actual demands of the workplace. Monge & Frisicaro-Pawlowski emphasize the importance of encouraging students "to engage in personal information management by using… web-based media" and "use technology for social interaction and collaboration" (2014, p. 70).

In order to start bridging the gap between the skills typical graduates acquire through library instruction and those that will prepare them for workplace success and lifelong learning, we created an online guide that reflects the I-LEARN model (Neuman, 2011, p.97) and

- covers a variety of information competencies, including "staying smart" in a rapidly changing world (Head, 2016), organizing information, creating content, succeeding in online collaboration, and being a safe and responsible online contributor;
- points students to free institutional resources that may be available after they graduate, and quality online tools and resources they can use anytime; and
- provides tips and best practices for essential information-related tasks, including managing information, publishing content, and maintaining an online presence.

Outcomes

Participants will take away

- ideas for the guide structure and content, which can be adapted to their needs;
- suggestions on developing a guide with input from faculty and other campus stakeholders, and
- examples of how various pages of the guide can be integrated into course content.

We will share our experience of using the guide in course-specific instruction and observations of the impact it had on students We will discuss our future plans, which include working with subject specialists and faculty to create discipline-specific assignments, instruction, and guides in order to equip students with information skills relevant to their future workplace.

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Keywords: *information literacy, digital literacy, information competencies, lifelong learning*

Presenting Information Visually: An Essential Skill for Workplace

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The ACRL Framework (2015) recognizes students as creators of information and the WPA Outcomes Statement (Council of Writing Program Administrators (CWPA), 2014) expects students to "adapt composing processes for a variety of technologies and modalities" and "employ the methods and technologies commonly used for research and communication within their fields" (CWPA, 2014). In line with these expectations, students in English Composition courses may be asked to "recast" their research paper in a different genre. In libraries we frequently observe students working on PowerPoint presentations and other formats for various courses, but rarely get requests for instruction related to these tasks. According to our inquiries, faculty at our institution do not provide guidance to students regarding the technologies and best practices for presenting information in alternative, especially non-textual, formats. We thought that this was a serious oversight in preparing students for the workplace, because future employers expect good communication skills (Heinrichs & Lim, 2010), which include visual communication (Reynolds, 2008).

In this presentation, we will share how we attempted to bridge this gap. We will describe case studies from service learning and capstone courses. Through embedded support and hands-on, face to face instruction we

- introduced students to the power of visual information,
- emphasized the importance of research for creating powerful visuals,
- discussed what makes an effective visual presentation,
- highlighted best practices in visual presentation of information, and
- demonstrated tools and techniques for finding quality images and creating charts, graphs, and simple infographics.

Having seen many poor student PowerPoint presentations and being aware of the importance employers pay to employees' presentation and communication skills, we devoted a hands-on session to PowerPoint best practices. We addressed common mistakes and suggested solutions based on advice from visual communication experts. We assumed that students had basic working knowledge of PowerPoint and were able to focus on design, layout, and visual elements. Resulting student work demonstrated how much students benefited from introduction to proper tools, search strategies, and best practices in visual presentation. In their course evaluations and a mini-survey at the end of the semester students stated that they appreciated being introduced to the skills they were supposed to have and indicated higher proficiency with the software and confidence in their presentation skills.

We will share our future plans, which include expanding instruction on best practices in visual communication to other disciplines to reflect the disciplines' communication practices.

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Keywords: *information literacy, presentation of information, visual communication, PowerPoint*

Digitization of a Scoring Rubric for Information Literacy

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During 2009 and 2010, a scoring rubric for performance assessment of information literacy (IL) was developed (Van Helvoort, 2010). The rubric proved to be a reliable and valid measurement instrument in different educational situations (Van Helvoort et al., 2017), but also an effective tool for the acquirement of IL skills (Van Helvoort & Joosten, 2017). The present project includes the creation of a digital and interactive version of the rubric (an 'eRubric', Raposo-Rivas & Gallego-Arrufat, 2016) that can be easily used by both staff and students.

One of the motives for digitizing the rubric for information literacy was to integrate it into virtual learning environments (VLEs). It has been argued that digital instruction tools (video instructions, digital quizzes and online lectures) motivate the present generation of students more than traditional face-to-face instructions (Kurbanoğlu & Akkoyunlu, 2016). The scoring rubric for information literacy is not only an assessment tool but also serves instructional purposes. A digital and interactive version is believed to enhance its popularity among student users.

In addition, there are many faculties at The Hague University of Applied Sciences that are actually rebuilding their courses to become 'blended' learning environments, meaning that they are developing digital, technology-based instruction tools which they want to mix with more traditional face-to-face instruction methods. This is therefore an appropriate time to promote a digital version of the rubric. The ultimate goal of the project is to make the scoring rubric for information literacy more widely used by both students and academic staff in a variety of faculties and disciplines.

The interactive rubric was created with the form creator of Acrobat XI Pro. The interactive form provides a variety of opportunities:

- Promote usage by both staff and students (unlike many of the current grading tools that are built into the VLEs)
- Generate feedback by check boxes and empty text fields for comments
- Incorporate clickable links to learning resources
- Calculate and assign grades for students' products
- Send feedback directly to the student
- Collect grades for students' products over different years and monitor their progress
- Collect grades to analyze inter-rater reliability for instance
- Collect grades on classroom, curriculum and institutional level, for example with the purpose to benchmark.

The English version of the interactive scoring rubric for information literacy can be downloaded at: https://www.thehagueuniversity.com/practical-matters/library/information-literacy

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Keywords: *rubrics, information literacy, virtual learning environments, blended learning*

Referencing in Scientific Practice: a Course for PhD. Students at BUT

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The Central Library at Brno University of Technology (BUT) has a wide range of information literacy courses, workshops and instructions for students and academic staff. In the last three years, PhD. students have become the main focus of the library educational activities. Besides e-learning courses about scientific publishing we prepared a blended-learning course about different aspect of citations, referencing and publication ethics. The course also focuses on electronic information resources, critical thinking and Open Access. These topics are really important for the students, but they do not feel competent enough. As most of the PhD. students at BUT lead seminars for undergraduate students, the aim of the course is not just to equip the PhD. students with the necessary knowledge, but they should also learn how to explain these topics to their own students.

The study materials are provided in the Moodle e-learning system where there are discussion forums, tests and tasks readily available for the students all the time. In the face-to-face lectures, we use different creative techniques of teaching and working with information. Students learn the subject not just by reading the study materials, but also through actively engaging in different games and tasks. The relaxed atmosphere also helps students to discuss and question what they have learned and fix their knowledge.

For evaluation of the impact of the course and students' satisfaction we used a few different methods – pre-testing and post-testing, evaluation questionnaire, artefacts analysis and focus group. Those tools helped us to identify the gaps in the knowledge, the topics that should be covered in lectures for PhD. students and teaching techniques that are effective.

Students generally find the course beneficial for both their publishing and teaching experience and indicate that they have already used some of the knowledge and teaching techniques in their own teaching. They appreciate good communication within the course, the informal atmosphere, and the inclusion of creative techniques and game elements into learning. Many have explicitly expressed that the lessons were a form of relaxation for them, but also associated with the transmission of quality educational content. They considered meeting face-to-face associated with e-learning support as a convenient way of learning. They judged the e-learning part as exceptionally good, but personal contact is also important for them.

In the best practice presentation, we aim to share our experiences with teaching information literacy topics using non-formal activities and present the information we received from the evaluation methods we used.

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Keywords: *blended-learning, referencing, gamification, PhD. students, course evaluation*

Peer Point: Looking Back on Five Years of Engaging Student-To-Student Support

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Information overloads, fake news, click-bait: Information literacy was never more important and relevant than it is today. The growing emphasis on these skills means that students are expected to be increasingly capable at handling and processing information in a vast, interconnected (academic) world. The Maastricht University Library has a leading role within the university in the education of information literacy. Traditionally, the library's services were solely executed using *exper*t support. But in order to improve student engagement and the approachability of the information literacy support services, the Maastricht University Library introduced a complementary *peer* support service: Peer Point.

Since 2012, the team of information specialists at the Maastricht University Library has been strengthened by a small group of students who provide student-to-student information literacy support. This group of specialised students, called Peer Point, provides assistance to fellow students in the fields of academic research and writing. The Peer Point students are usually master students from different disciplines (for example psychology, law, or economics). Peer Point focusses mainly on providing support with development of search strategies, the use of databases, the structuring of papers, and referencing.

The Maastricht University Library services most of the university's 16000 students with information literacy training sessions, workshops, online tutorials, and/or face-to-face meetings. Peer Point was developed to provide an additional approachable service for students struggling with more basic information literacy skills. Since expert support is not always necessary, a peer support service can be a way of assisting more students in an engaging fashion. Peer Point is therefore a quick and responsive linking pin between the library staff and the student population. Even though the Peer Point students are not considered to be information *specialists*, they are well trained by the library experts and can therefore provide reliable information literacy support.

The aim of this contribution is to provide insight into the pros and cons of integrating student-to-student support in the information literacy services of a university library. Not only are student-to-student services still rare in the field of information literacy, there is also a scarcity on mid- and long-term evaluations on the topic. Since the introduction of the service in 2012, the library has compiled annual reports that evaluate Peer Point. The findings of these reports are complemented with additional materials, such as face-to-face feedback and surveys. In this best practice session, we want to elaborate on the added value of recruiting students and we would like to present our findings, recommendations, conclusions, and the lessons learned after five years of student-to-student information literacy support services. Lastly, the session will show that employing students will not only diversify your library team, but also enliven and rejuvenate the subject of information literacy.

Keywords: *information literacy, student-to-student, higher education libraries, student engagement, workforce development*

Digitization Projects of the University Library Belgrade as Propellants in Researchers' Information Literacy Skills Enhancement

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The University Library in Belgrade (ULB) has gained experience in various EU funded digitization projects and has positioned itself as the main innovative digital content provider. Each new digitization project at ULB not only presented researchers with new digital data but also provided new functionalities and possibilities for more efficient use of newly available digital resources. As a result, researchers are faced with new challenges in acquiring new information literacy skills. Each ULB digitization project has had a follow-up session where librarians trained mostly humanities and social sciences researchers in the new information literary skills needed to use digitized collections. This is the continuation of already established library practice to train researchers how to browse information available via the Consortium of Serbian Libraries for Coordinated Acquisition (KoBSON) that gives them access to world-leading providers of scientific information products and services. So far, since 2001 around 5,000 researchers have been trained in these endeavours.

It is anticipated that the information needs of researchers relating to research will be met through the information available via digital technology (Newton, 2000). So, the ability to access and use digital technologies is becoming a critical aspect of the contemporary science. Academic libraries are the places where researchers discover new information and where information literacy skills of researchers are being developed (Julien et al, 2017). This is especially important for humanities and social sciences researchers in Serbia who represent a group that often struggles to acquire up-to-date information literacy skills.

For instance, during 2016, within the Endangered Archives Programme (EAP) of the British Library funded project, ULB digitized previously unknown private collections and brought them into the international research domain. Digital materials brought to light for the first-time invaluable information for humanities and social sciences researchers and are available through an interface that allows for new search functionalities so far not used by many researchers in Serbia. This access needs to be matched in the information literacy domain with proper skills for using such searches. The specificity of trainings provided by ULB in the follow-up to its EAP project lies in tailored trainings that range from information sessions for researchers who already have a high level of information literacy skills to programs that required librarians to engage in research projects related to new digital collections as research team members in order to instruct and educate researchers. Thereby, all the flaws in the previously held information literacy skills of researchers are covered and self-reliant use of new digital resources is guaranteed.

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Keywords: *digitization projects, University library Belgrade, researcher' information literacy skills, enhancement of information literacy*

To Embed Information Literacy in Courses in the School of Architecture – a Collaborative Project Between Librarians and Faculty Staff

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Objectives

This is a presentation of a collaborative project between librarians and faculty staff at the School of Architecture at KTH Royal Institute of Technology on how to embed information literacy into courses. When the School of Architecture moved to the main campus at KTH, the architecture collection was integrated into the main library. The challenge is to bridge the gap between the School of Architecture and KTH Library and find new ways to collaborate with teachers (academic subject specialists) on a formal basis to enable students to develop academic and information literacy. The aim is to foster a line of progression for academic and information literacy from Year 1 to Year 3 and in collaboration with teachers design learning activities that are related to learning goals and are embedded in authentic assignments to raise the students' motivation (Steiner, 2016).

Methodology

Research shows several examples of collaborations between different partners at campus that aim to embed information literacy into courses (Wang, 2011). A self-regulated learner will know how to regulate her or his learning and will be able to use the learned skills in different contexts (Nicol and Macfarlane-Dick, 2006, Steiner, 2016). The design of the workshops in this collaboration aims to enable students to develop self-regulated learning and a metacognitive approach to information seeking and evaluation of sources that can be transferred to problem solving in professional and other contexts. To let students perform mini-tasks through a semester will gradually prepare them to perform their final assignment successfully (Owen, 2016). Year 1 architecture students at KTH take part in several short workshops that will help them to reinforce their academic and information literacy skills continually. The workshops for Year 3 are performed together with the teacher, which lets the students practice information literacy skills in a subject-related context. The results of the academic and information literacy education are drawn from teachers' evaluation of the students' assignments after the model was designed and implemented.

Outcomes

Letting the students reflect upon the relevance of their choice of sources and compare the results from searching in different resources during the library workshop will enable them to develop a metacognitive approach to learning. The teacher will also be able to evaluate to what extent the students can reflect upon their search process and evaluate the usefulness of the sources they have found for academic purposes by studying the students' list of references. Meeting the students several times during an academic year enables the students to develop academic and information literacy step by step. The teachers' evaluations of the students' assignments show a general improvement when it comes to the amount and variety of sources used. One interesting finding is that the architecture students frequently visit the library and seem to use it as a second learning area. The next step is to evaluate in what way the students have developed information literacy by comparing Year 3 students from different academic years before and after the workshop model was designed.

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Keywords: *librarian-faculty collaboration, embedded learning, architecture education*

Information Literacy and Education: Teaching ILS at the University of Botswana Library

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Rapid technological developments around the globe have increased the importance of information literacy in higher education. Its importance has surpassed user education and library skills activities that included orientation, bibliographic instruction, and reference desk instruction. According to the SCONUL Working Group on Information Literacy (2011), information literacy is a key attribute for everyone, irrespective of age or experience in the 21st century. The Association of College and Research Libraries (2000: 2) states that information literacy forms the basis for lifelong learning and it is common to all disciplines, to all learning environments, and to all levels of education. Information literacy has been embraced by many academic institutions around the world.

This paper purports to share the experiences of the University of Botswana's involvement in the teaching of information literacy skills. It will show how 21st century developments such as proliferation in the use of information technology, easy access to the internet, and changes in the teaching of information literacy skills have altered the use of the library as a place for knowledge creation as well as librarians' opportunity to fully contribute to the educational process. An overview of both past practice and the current practice will be discussed. The paper will illustrate the important role professional librarians played in information literacy education at the university of Botswana library based on the author's experience in participating in user education, teaching information literacy, and offering course-linked information literacy to undergraduate and postgraduate students referred by their lecturers for instruction on research skills. Challenges affecting librarian's effective teaching of information include the time allocated to the teaching of information literacy skills by librarians. Another challenge is declining student numbers as compared to about ten to fourteen years ago when librarians used to be overwhelmed by large classes. Additional challenges that will be discussed are ineffective collaborative partnerships between academics and library professionals and the reluctance of many teachers to acknowledge that library professionals have a legitimate educative role. The paper will conclude by recommending constant review of the collaborative partnership between academics and librarians to ensure a mutually beneficial relationship that is nurtured to meet both professional and educational goals (Green and Green, 2014:10). Library management's role in ensuring effective partnership between academics and subject librarians in various departments and faculties will also be recommended to ensure equal depth of collaboration by all.

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Keywords: *information literacy education, librarians and user education, librarian-academics partnerships, librarians and education, information skills*

Information Literacy and Academic Libraries as Working Place

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Efficiency and assessment of cataloging in academic libraries' technical services have been a controversial topic regarding catalogers' performance, their time management, and department's productivity (McCain & Shorten, 2001). Not only would this type of study have an impact on the cost efficiency of the libraries but also in users' accessibility to library resources. Our study was in a mid-sized private academic library with receiving thousands of books' donations that sometimes creates a cataloging backlog.

Objectives

This study's objectives were to assess staff's performance, their critical thinking/decision-making effectiveness, practical group/meeting communication, solutions in time management/productivity of department, and retention of good catalogers.

Methodology

Each cataloger in our assessment was bound up with problem-solving/decision-makings and making a connection to the sources to use. We gathered data from each cataloger, the amount of time performed in cataloging items (copy cataloging/original cataloging separately), with a focus on formats (monographs), circulating collections, and English language materials only.

As Charbonneau (2005) pointed out, one of the important factors that need to be taken into consideration in a typical assessment like this and for a successful outcome, is supervisors' perspective and taking into account the managerial, administrative, and cataloger's perspectives in the process including the emotional and psychological effects on individual employee's performance. To this end, after each phase of assessment's completion, the challenges were discussed in group meetings and any helpful points incorporated into the next phases of the assessment.

Outcome

Bruce (1999) pointed out seven faces in his workplace experiences of information literacy. Two of them were information literacy is experienced as "executing a process" and as "controlling information". While these were the major factors in our assessment, we also considered the risk-aversive factors in staff with possible OCD. As other researchers (Sip, Muratore, & Stern, 2015) suggested, we observed that picking healthy choices, although at a slower rate in some employees, are not affected by the social context or the way the choices are presented. But we also found out the number of cataloged items might be very different on pre-cataloged items depending on the tools/functions utilized by each individual. The figures/outcomes were compiled and shared with the library management. This also helped the staff in learning multiple ways to manage/raise the productivity of the department with the competing demands of our students/faculty in a timely manner.

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Keywords: *information literacy, decision-making, libraries as working place, cataloging benchmarks, cataloging assessment*

Context is Queen – Connecting Information Literacy to a National Qualification Framework for Higher Education

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Objectives

The National Qualification Framework (NQF) gives a description of the formal Norwegian education and training system (NOKUT, 2017). The aim of this contribution is to describe the process of implementing the information literacy focused parts of the framework into the Bachelor of Nursing curriculum at Sør-Trøndelag University College (now merged with the Norwegian University of Science and Technology). This was a joint project, with library staff working in close cooperation with the Nursing Department. We will present both the working process, results and lessons learned.

Methodology

The library participated in the steering group for the NQF-implementation at the Faculty of Nursing. The main purpose for this effort was to collaborate on formulating learning outcome descriptions for information literacy. The first step was for the library to define what knowledge, skills and general competencies should be required and taught at the different stages of the course of study. We formulated learning outcome descriptions for both the bachelor level and for further education. The steering group then had discussions on defining concepts, source types, appropriate level of knowledge for the different stages and so on, before we reached a common understanding. There were further revisions of the descriptions, also because the requirements of the framework had to be met in terms of style and language. All in all this process was iterative and fruitful.

Outcomes

The result of the project was descriptions of learning outcomes for information literacy to be used in the curricula for Bachelor of Nursing. Based on the learning outcome descriptions, a teaching plan, with timing, duration and content of the library teaching was developed. Together with the faculty, this plan is revised once a year. Such a plan has several advantages; it is person independent, predictable and well rooted in the academic program. The planning of quality instructions in information literacy is also much easier. The collaboration between faculty and library in this project resulted in a useful reflection process for all involved, and also raised faculty awareness of the importance of information literacy. Furthermore the work strengthened the relationship between library and faculty in general and led to even more collaboration on other projects.

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Keywords: *information literacy, bachelor of nursing, learning outcome descriptions, higher education*

Setting Up a MOOC for Information Literacy Instruction

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Libraries have always been involved in addressing the need for information in the communities they serve. Until a few years ago this task consisted almost exclusively of the creation and curation of a good collection of books and other sources, and making them available to the public. Today the view that the library should function solely as a provider of content, is no longer sustainable.

In view of this new reality, many libraries have taken it upon themselves to disseminate their ample supply of expertise in information skills to their patrons. This can be done by organizing workshops and seminars on information literacy. Another option is to construct online learning environments where the public can acquire these skills at their own pace. At the University Library of the Vrije Universiteit Brussel we decided to opt for a combined approach by complementing our face to face instruction sessions on information skills with the use of a Massive Open Online Course or MOOC.

In this contribution, we describe the process of building a MOOC on information literacy from its earliest planning stages until its introduction to the public. First, we will outline the role the library plays within the university concerning the dissemination of information skills to students, staff and faculty. Next, we will discuss our practical situation in terms of funds, time and personnel that where available to the project. Following we review some of the key requirements that we set out to fulfill by building the MOOC.

The process of selecting the right platform – in this case the Canvas Network - will be discussed, together with a brief overview of the main alternatives. We will look at the technical features of the Canvas Network environment and examine the use of additional soft- and hardware that was needed to attain the final result. In terms of the organization of the project, we include an overview of the general timeline and specify the major deadlines. We will also describe how tasks where divided amongst the collaborators and what snags and snares where encountered during the development of the project.

Special attention will be given to the presentation of the subject matter, the intended user experience and how we tried to align these with the specific needs of our target audience. The possibilities of gathering feedback from our users will also be explored together with an array of incentives that where incorporated to improve participation and perseverance of the trainees. Finally, we uncover how we decided to introduce the final product to our users and stakeholders.

Although the primary environment for which the MOOC was created is an academic setting, we will argue that key elements of it can easily be transferred to different settings. This presentation may very well lead to the use of MOOCs for information skill training, in the office or as part of a service to the general public.

Keywords: *MOOC, information skills, information literacy, library*

Evaluating and Assessing "Against the Grain": Applying Mixed Methods in Support of Critical Library Pedagogy

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Return on investment (ROI) is an expectation of neoliberal universities. Evaluation and assessment provide ways to measure and communicate value by demonstrating effective teaching and student learning. The faculty of the University Libraries (UL) at the University of South Dakota espouses Critical Library Pedagogy (CLP), the "practice…of inclusive and reflective teaching…to broaden students' understanding of power structures [and]...to make the world a more socially just place" (Pagowsky & McElroy, 2016, p. xvii). Therefore, the UL's evaluation and assessment should be informed by CLP praxis.

Qualitative evaluation and assessment methods such as focus groups and portfolios lend themselves to the inclusion of student voices (Accardi, 2010). However, these approaches are very time- and labor-intensive and are not sustainable for large student populations, longitudinal assessment, or small libraries with limited resources. Managing such largescale projects sustainably often involves sampling populations. For instance, focus groups are assembled as representative samples of a larger population, and participants often join focus groups in exchange for incentives. Such offers exclude students that have little time or motivation to participate, calling into question how representative the sample might be. Additionally, portfolios are finished products that obscure evidence of learning derived from specific activities such as one-shot library sessions.

The investigators, the UL's two-person instructional team, were confronted with all of the aforementioned challenges when they were directed to evaluate information-literacy (IL) instruction and assess student learning of IL in Freshman Composition, a large, multi-section course. In spite of these constraints, the researchers were determined to find a way to implement evaluation and assessment during instructional sessions in accordance with CLP praxis, i.e., using qualitative methods that are student-centered, inclusive, efficient, and sustainable.

To satisfy neoliberal expectations, the researchers developed four Likert-like evaluation questions. To subvert this top-down process and address CLP praxis, they added an open-ended evaluation question designed to elicit free student responses about the quality of instruction they had experienced. This left little space for assessment; the investigators chose to add a final open-ended assessment question to stimulate critical thought about learning resulting from the respective IL session. The result was a hybrid evaluation and assessment instrument.

This hybrid instrument provided a rich data set composed of quantitative data points and natural-language statements from students that could be quickly coded and analysed by the two researchers. The qualitative evaluation data both illuminated and informed outcomes suggested by the quantitative data. The qualitative assessment data identified learning outcomes in the students' own voices in bottom-up fashion. This "participative" (Accardi, 2010, p. 255) process provided data for faculty reflection and self-improvement and for revision of instruction.

As a result of this presentation, participants will be able to recognize that mixed methods are appropriate for largescale evaluation and assessment projects. Second, participants will be able to justify the use of qualitative methods for evaluation and assessment in line with CLP praxis. Finally, participants will be able to use the hybrid evaluation and assessment tool as a template to create their own evaluation and assessment instrument.

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Keywords: *assessment, critical library pedagogy, evaluation, quantitative methods, qualitative methods*

Measuring the Importance of Information Literacy Education in Academic Libraries from Students' Perspective: A Comparative Study among the University of Tsukuba, Fudan University and the National Taiwan Normal University

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This study aims at examining students' attitudes and perceptions towards the values and importance of the information literacy education program provided by the libraries of three leading universities in Asia--namely, University of Tsukuba (UT), located in Japan, Fudan University Library (FDU), located in China and the National Taiwan Normal University (NTNU), located in Taiwan. It uses a comparative approach to highlight the differences in students' feelings about a series of information literacy education programs carried out by these three academic libraries. The data was collected through questionnaire surveys with student participants, together with a small number of face-to-face interviews with the reference librarians to reflect on the survey results. A total number of 317 survey responses were collected from these three universities.

Results of this study indicated that although the library user education programs all are influenced by ALA, among these three universities, students' attitudes and perceptions towards the importance of library user education are different because of multiple factors. In addition, the students consider information literacy to be important and essential for their daily learning and research, however, the level is different. Especially for the respondents at NTNU and FDU, both student groups felt user education to be slightly more important when compared with their UT counterparts. In addition, the student participants from both NTNU and FDU considered workshops catered for e-resources to be most important. Comparatively, UT students considered online information literacy instruction as the most important of all library user education programs. The value of this study lies in the fact that it is unique due to the special population being studied, as few comparative studies have been conducted to examine students' attitudes and perspective towards library user education, and in particular, in East Asia. The findings of this study are useful for identifying the different learning needs amongst these two groups of students, as well as other barriers that were preventing the information literacy education programs from being integrated into students' overall learning, and the university's core curriculum as a whole.

Keywords: *information literacy education, university students' attitudes, comparative study, academic library*

Librarians of the World Unite and Take Over: Information Literacy in the Post-Truth World!

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The purpose of this talk is to focus on the role libraries could/should play in society at large to enhance citizens' sense of empowerment through knowledge and information. The presentation explains why this is not just a role for public libraries, but also for academic libraries. Some collaborative projects between various regional libraries are shown as examples.

Academic librarians naturally concentrate their attention on students and researchers in higher education. But what would happen if science started to lose its authority? What happens if people stop trusting science? Are we actually heading towards a 'post-factual society' as sometimes reported in the media? From a librarian's point of view there is a cure against 'alternative facts': Information literacy (IL). To help the general population expand their information literacy competencies, we need to look outside the university walls.

At UiT The Arctic University of Norway, we are increasing our cooperation with other types of libraries to spread information literacy to the rest of the population to empower each citizen to make decisions based on facts instead of Facebook. In a new project, we are planning a new version of the open access online course on information literacy, iKomp (http://ikomp.no/), targeting sixth form/high school pupils. The course contents will be created in close cooperation with a selection of teachers and school librarians. The aim of this project is to increase focus on information literacy among the youth demographic, both to prepare them for higher education, but also to make them better equipped to face the choices they need to make as young adults.

Another example is an ongoing cooperation where librarians from the University Library participate in seminars and workshops to increase IL skills and knowledge among librarians from public libraries. The purpose of this is to make these librarians more confident and competent in their information literacy outreach.

Information literacy librarians have an important competency to share in order to increase the library's role, not just as an arena of learning, but also as an arena of democracy. From the world of science, several worried voices are now being heard, and rightly so. In a comment in Nature in 2016, Kathleen Higgins wrote: "Scientists and philosophers should be shocked by the idea of post-truth, and they should speak up when scientific findings are ignored by those in power or treated as mere matters of faith." For researchers to disseminate their messages and results to the public, society must be able to listen, evaluate and know how to choose facts over alternative truths. Information literacy is a necessary tool in this connection, and one which librarians are highly skilled at.

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Keywords: *information literacy, post-truth, citizenship, learning, democracy, library collaboration*

Library Sidekicks: Training Student Employees as Peer Instructors

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How can you turn your student assistants into strong information literacy specialists? Let them teach. Let them teach through training, orientation, reference and research. Help them become information leaders to their fellow students and gain the tools to succeed.

Academic libraries in the United States often hire student assistants to help cover the staffing responsibilities in the library. They are trained to provide services that make up the daily operations of the facility. However, students can provide more than just mundane, everyday tasks like shelving and checking in periodicals. Employment at the library can help them build skills through peer training, interacting with international students, and leading and working on specialized projects. Ultimately, these activities can then improve both their own information literacy skills and those of the students they assist.

Studies have shown that some of the benefits of using students as peer teachers include them being relatable, approachable, and easy to understand as librarians can sometimes overcomplicate explanations (Bodemer, 2014; Farrell and Driver, 2010). Looking at the training and workload of student assistants from two university libraries in Ohio, we can see how giving students more varied and complex responsibilities can affect student morale and improve their skill set. Observing both of our library models, our presentation will cover how students are initially trained as well as the ways they help us train incoming students.

Highlights from these models include the breakdown of the training structure from library staff member to peer training, with students who have seniority being given more responsibility to train new student assistants. These assistants are trained in a variety of ways, including using a Google site that covers everything from circulation to 3D printing, while also assessing the effectiveness of their learning. The site itself is maintained and updated every semester by library staff and student assistants.

Relating the strengths and interests of your student employees to their work assignments can be beneficial to not just the students, but also to the professional staff and patrons that they work with. Participants are invited to learn about our different programs and how we empower our student workers to lead the discussion on information literacy. This presentation will offer best practices on how to train and motivate your student assistants, while also discussing the advantages and disadvantages of their employment.

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Keywords: *peer training, peer teaching, student employees, information literacy*

What We Stand to Gain: Librarians Leading Collaborative Assignment Design

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One of many shifting areas for academic librarians is their role in the design of research assignments. While many librarians possess both expertise and the desire to engage in assignment design, doing so in practice requires deep collaboration and careful role negotiation with discipline faculty. Faculty, who themselves have varied degrees of formal pedagogical training, may not recognize librarians as teachers with this instructional design expertise. Finding the "collaboration sweet spot" can be difficult to achieve in spite of best intentions (Junisabai, Lowe, & Tagge, 2016). However, librarian participation in creating authentic, scaffolded research opportunities is crucial if we are to have a deeper impact on student learning.

In order to provide structured opportunities for feedback and collaboration at the assignment design level, librarians at Utah State University facilitated a full-day workshop for 24 interdisciplinary faculty and six librarians. Drawing on methodologies from the National Institute for Learning Outcomes Assessment (NILOA), the workshop included discussion and reflection on scaffolding research processes, faculty and librarian review of their peers' research assignments, and small group feedback sessions called charrettes. Following the workshop, faculty revised and implemented their assignments. Researchers conducted post-implementation interviews with faculty regarding their revisions and workshop experience, and assessed a sample of student work. Due to a generous grant from the University Provost designed to promote curricular innovation, the library was able to compensate faculty for their participation in the study.

This presentation will discuss the impact of the workshop on faculty and librarian practice and philosophy, shedding light on the mutual gains that occurred through collaborative research assignment redesign. Skills like working collaboratively and sharing information with authentic audiences arose as common assignment objectives across disciplines. As a result of the workshop, faculty were able to partner more easily with their subject librarian for integrations in the classroom. Librarians gained insight into the skills that faculty were focusing on, prompting discussions of scaffolding and considerations of how 21st century workplace skills are being developed across programs and across the university. Observations from workshop conversations and post-implementation interviews also revealed how learning opportunities are translated through assignments, and how different styles of teaching, designing and thinking about learning are evident in this process.

While the workshop positioned librarians as a voice that belonged at the assignment design table, the more encompassing message of the event reiterated the value of collaboration, the importance of making research tasks explicit, and the benefits of including a range of expert voices in the assignment design process. A representative comment from a faculty member about major takeaways from the workshop reflected those values: "Faculty here (including librarians) are really committed to their teaching work and are willing to learn from each other and share expertise." These findings do not diminish the value of librarian leadership and involvement. Rather, they emphasize the opportunity and importance of the library in filling a niche – providing a place and forum, as well as expertise, for faculty collaboration on assignment design work.

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Keywords: *assignment design, information literacy, faculty collaboration*

Partners in Class: a Needs-Based Approach to High School Curricular Support at the National Library of Technology in Prague

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This case study discusses the development of courses at the National Library of Technology in Prague (NTK) for different grade levels developed in direct collaboration with several private schools, notably the Austrian School in Prague (OEGP) and the English College in Prague (ECP). These courses were developed in close partnership with teachers at these schools according to specific curricular needs: students at both schools must write a formal paper in order to graduate. For OEGP, a highly structured 'pre-scientific paper', (VWA) is required by the Austrian Federal Ministry of Education (2017) for graduation. ECP students must complete the International Baccalaureate Extended Essay (IB EE).

The case study contains descriptions of multilingual courses relevant to any libraries who support multilingual research/writing environments—while the IB EE must be written in English, VWA students can select the language of their papers (Czech, English, or German). This poses unique challenges for both NTK instructors and school teachers because different resources and tools must be introduced for different language environments. In our paper, we describe strategies we have developed to overcome such challenges, including our approach to instruction for citation management tools—we recommend different tools for different languages, for example, and coordinate teaching with teachers based on each school's curriculum.

Although information literacy (IL) is supposed to be included in Czech high school programs as a part of a larger discipline, *Informatics and Information and Communication Technology* (Výzkumný ústav pedagogický v Praze, 2007), the majority of schools neglect IL almost completely (Medková, 2011). This means, among other things, that NTK instructors and school teachers must include in all courses a heavy emphasis on describing relevant resources and introducing the concept of publication ethics, particularly for schools such as OEGP which do not have their own libraries.

The paper outlines the next stages of program development, including planned open access learning materials as well as our efforts in encouraging the Czech Ministry for Education, Youth, and Sports to include a formal paper requirement similar to the VWA or IB EE in future high school graduation requirements. At present, most Czech high school students are not required to write a paper in order to graduate (Parliament of the Czech Republic, 2004; Ministry of Education, Youth and Sports of the Czech Republic, 2009).

Finally, we relate whether or not our experiences correspond to findings from original research conducted at NTK identifying a gap in writing and research skills for Czech undergraduates in STEM fields (Chodounská, 2016). In closing, we discuss how stronger high school requirements could potentially improve writing and research skills for all students entering university programs.

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Keywords: *information literacy, publication ethics, high school students, library instructional services*

Information Literacy and Knowledge Management in a UAE University Library

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Objective and Motivation

This paper seeks to appraise the manifestation of knowledge management (KM) practice and explore its relationship to information literacy (IL) in a UAE university. It represents similar universities operating in a context where work patterns and student expectations are evolving. In the current information overload environment, information consumers need to be prepared to avoid becoming victims of or unintentionally developing into creators of fake information, so that their hoped-for innovative creations are situated on a solid base. Some disquietude arises from what Berkowitz and Schwartz (2016) refer to as the 'Fifth Estate' media, "largely comprised of bloggers and columnists" who, through satire, try to bring back truth, impartiality, confidentiality and honesty to mainstream news creators. But then, the question is whether all consumers of news and publicly available information are able to distinguish between satire, truth, and genuinely fake news and disinformation. Additionally, the rise in social media robots (social bots) can sometimes be harmful, for example, when they contribute to the spread of unverified information or rumours, and malicious entities designed specifically with the purpose to harm (Ferrara et al, 2016, p. 98).

Methodology

A survey questionnaire for descriptive research and institutional document studies are used to understand the perception that employees have of KM tools and principles in their teaching-related work because these form KM critical success factors (CSF).

Findings

The effective use of information systems, and learning process implied in knowledge creation and transfer make KM and IL tightly linked. This is the target of IL skills development as initiated and supported by the library, as well as presumed in the IL abilities applied to academic assignments and given tasks in situated practices.

Value

From the research themes surveyed, the conclusion is that in a knowledge-based context, the librarian's job takes on a significantly different educator/ researcher/ innovator path in addition to managing traditional responsibilities.

Research implications

In the UAE, a government-initiated KM perspective makes it necessary for universities to be cognizant of implementing the culture because of the demand to produce graduates who can fulfil the role of 21st Century knowledge-competitive workers. The academic library has a complicated set of issues to deal with because it is the nerve centre for most scholarly productivity. One of the ways by which it contributes is through an IL programme to support lifelong learning demonstrated by the ability of individuals to seek, evaluate, use, and create new or different results effectively. However, more research still needs to be done on workplace IL and information behavior, i.e. beyond the classroom.

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Keywords: *knowledge management, information literacy, fake news, lifelong learning*

Information Behavior by Users of a Prison Library: a Descriptive Study

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Considering the importance of the studies on information behavior and its application to different contexts and users, the present work analyzes the information searching behavior by the users of the itinerant library of the Attorney Antônio Jacinto Filho Penitentiary Complex. Relevant theoretical references include published research by Belkin (1980), Chatman (1991), and Silva Neto and Leite (2011). A descriptive methodology was used with a sample of thirty users of the library. The data collection instrument used was the questionnaire with closed questions. The variables studied in the questionnaire were: school education, age group, time of detention, frequency of library use, information search, information retrieval, information sources, bibliographic survey, selection criteria, and access to information.

The main results found that the majority of users have incomplete elementary education, are young people between the ages of 18 and 25, and have been imprisoned for less than a year. They searched and used the information in the library. The book was considered the most used source by prisoners. The main form of documents research was through a bibliographical survey carried out by the library official. The most used criteria for selecting the information was the title or the summary of the document. Reading inside the library appeared as the most performed activity by inmates. They considered books and newspapers as the most important sources for obtaining information. One of the limitations of this study was the non-generalization of the results. Since it used a small sample or respondents at only one of its eight prisons, results cannot be generalized to the state of Sergipe as a whole. However, it provides elements for a larger comprehensive study in the state and it is recommended that other studies be carried out with the other prison units. It is hoped that this work will bring significant contributions to the area of information science, which will raise other discussions about the studies regarding the informational behavior of marginalized communities.

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Keywords: *information behavior, inmates, prison library, attorney Antônio Jacinto Filho penitentiary complex*

Information Literacy in the Framework of a Network ICT Project in Cuba

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The NETWORK University Cooperation: Strengthening of the role of ICT in Cuban Universities for the development of the society is a Vlaamse Interuniversitaire Raad (VLIR) project. The aim of the project is to develop a national virtual educational network that will share courses material between all Cuban universities at the same time and together with the virtual educational network. This information management system will enable content to be share by all Cuban universities. That means that all Cuban professors and students can access the information stored in digital repositories and other information storage systems (2013). The network, in turn, is divided into three subprojects: Research in ICT related sciences; Open ICT Systems and Management; and ICT supporting the educational processes and the knowledge management in higher education (ELINF). In this context, the information literacy (IL) activities are essential. The objective is to socialize the actions and benefits of these activities as good practices in the framework of the project at Central University of Las Villas (UCLV).

Methodology

To define IL actions, it was necessary to carry out content analysis to the project documentation. These efforts focused on understanding how IL could contribute to the macro objectives of the project as well as identify the information skills of the audience through the application of the ALFINEV model (Meneses-Placeres and Pinto-Molina, 2011). The principal outcomes are: the IL status of the projects members at UCLV contribute to the goals of the project. A description of the design of the IL activities in the framework of the project are good practices that might expand to the other Cuban universities included in the network.

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Keywords: *information literacy, UCLV, VLIR, ELINF*

Information Literacy in the Service of Research Excellence. Some General Considerations and the Example of the "Promotion plus" Programme at Bonn University

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Research data and research data management are on the rise. There is a growing conscience worldwide for the value of research data, not only in science, but also in politics, economics and society. An increasing number of researchers seek to prove their findings by storing, describing and disclosing their research data. Data are made available for reuse in new, often interdisciplinary contexts. Scientific societies, associations of universities and political commissions in the US and in Europe, such as by the EU High-Level Group on Scientific Data (2010), the League of European Research Universities (2013) or the German Council for Scientific Information (2016), advocate the new importance of research data and the necessity to finance and to build up infrastructures for the handling of research data. More and more universities and research institutes agree and adopt institutional policies for research data management.

This development has a strong impact on the strategies and future development of university and other academic libraries. Their traditional self-perception of focusing more or less on indexing, storing and making available publications is called into question. The focus must gently shift to the better understanding of the methodology in the different scientific communities, on keeping up with innovative developments in this area, and consequently offering new services tailored to the special needs of the researchers. This challenge also applies to the teaching of information literacy. This is particularly the case for the teaching of information literacy in master classes as well as the doctoral and the post-doctoral education.

An example is the "Promotion plus" certificate of Bonn University. Young doctoral researchers participate in workshops and seminars as part of the Bonn qualification program for doctoral researchers. The promotion of information literacy is more and more oriented towards new forms of communication and practices in the research process, including research data management. Bonn University and State Library takes an active part in this program. Scientifically educated librarians impart knowledge in the fields of database research, reference management software, research data management and free software tools of interest for students and postgraduates. It is currently planned to extend the activities to further subjects like evaluation (bibliometrics/scientometrics) and Open Science. A special focus will be put on the scientific publication process. The young doctoral researchers will become familiar with the different forms of digital publication, the role of publishers, repositories, and copyright law.

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Keywords: *research, research data, research data management*

Information Literacy Workshops at the Test of an Iterative Process

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The presentation we wish to propose will focus on the beneficial effects of introducing an evaluation of the training sessions offered to first-time students. We will present the virtuous cycle of evaluations / adaptations following an iterative process which have allowed for improvement of material organization of the sessions, relevancy of its content and the progressive introduction of items (quiz type) in adequacy with the cognitive rhythms of learning and the interaction needs of students.

Sciences Po Library has trained first-time students in Information literacy for more than 30 years. From 2005 onwards, a post-session evaluation was set up, focusing on the timing, duration, density of the training, and the tools that the students were ready to use afterwards. An iterative process of improvement of these training modules began. In the first evaluations, it appeared that the period during which these courses were offered was not suitable for students. The first improvements concerned the shortening of the calendar which was initially spread over the first two months of the school year and which is now condensed, as a result of these evaluations, into the first two weeks of September.

In 2014, the library was inspired by the recommendations of ISO 16439: 2014 Methods and Procedures for Assessing the Impact of Libraries, including the chapter on "Testing the Impact on Knowledge and Skills". Sciences Po Library has therefore introduced ante and post-session evaluations in order to establish by a self-evaluation of participants an estimated skill gain and a certain level of self-confidence in the process of information searching. It was found that these gains are different depending on the level of study and the research tools surveyed.

In addition, the final evaluation of these sessions revealed a lack of interactivity and participation and a critique of the length of the session. Introducing quizzes instead of some of the exercises, reviewing the results on the spot with the students and revisiting, if necessary, not understood concepts was tested at the beginning of academic year in 2016 in response to these negative evaluations. In the opinion of both students and librarians, this brought a breathing space and an opportunity to create a bond between both students and interveners. The results of the final evaluation significantly improved as much related to the interaction as to the perception of the session's length (in reality the module had the same duration as the previous years), and on the intention to use the tools offered by the Library.

Other ideas of active pedagogy in these workshops were also tested in occasional sessions for small groups of students (video, true-false, work in small groups ...), in order to include them, where appropriate, into the more massive sessions for first-time students within their curriculum.

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Keywords: *information literacy, learning outcomes, user training, training assessmenz, self-assessment of users, ISO16439*

Developing Creative and Collaborative Approaches to Copyright Literacy: Experiences from the UK

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This paper reports on ongoing research from the UK into librarians' professional experience of copyright (Morrison and Secker 2015, Todorova, 2014; 2017). 'Copyright Literacy' (Morrison and Secker, 2015) is becoming an important facet of information and digital literacy with two fundamental aspects to this work; learning about copyright as a library professional to underpin the services and support you offer, and developing your skills as a copyright educator. Embedding and supporting effective copyright literacy is however challenging because of the nature of the topic and the political issues it raises.

Using findings from a phenomenographic study of academic librarians, four categories of description that describe the variations in experiences of copyright have been identified. These categories are a valuable way of understanding how to frame copyright education. The researchers have found that copyright is experienced as problematic and complex and consequently avoided. However, it' is vital that librarians understand and embrace the centrality of copyright to many aspects of their work as information professionals. The research found evidence that critical approaches to copyright education may enable a shift to a more empowered experience, but that senior managers need to provide support to ensure appropriate policies are in place to manage risk.

The paper also reports on a recent survey of UK copyright specialists, which examined the nature of their role, their place within their organization and the types of enquiries they deal with. In addition to developing a wider understanding of copyright across an organization, examining the status of copyright specialists seems to be key.

We will examine several recent successful approaches in the UK to building confidence and resilience in the library community. This includes the use of games and creative approaches to teaching about copyright and sharing knowledge through developing both local and regional communities of practice. We will also report on a workshop for academic librarians that examined the relationship between licenses and copyright exceptions. This work is part of the wider attempts by the UK Copyright Literacy community to improve levels of knowledge about copyright, build confidence in the library profession and manage risk through sharing good practice.

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Keywords*: copyright, digital literacy, global education, copyright literacy, creativity*

How do Continuing Professional Development Programmes Contribute to Workplace Literacy? Successful Frameworks at Singapore Management University (SMU) Libraries

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The 2016 OECD Report entitled, *Skills Matter: Further Results from the Survey of Adult Skills* sounded a clarion call for the need to invest in workplace skills in a globalized and hyper-connected world where technology is redefining the way we live, work and play. Libraries and librarians too have not been spared, especially with budget cuts where there is a need to do more with less, be productive, creative and innovative in the way they manage their resources – a key one being its human resources. The need to retain talent, reskill or upskill, and invest in them has become a priority.

The Singapore Management University Libraries (SMU Libraries) face challenges with the limited talent pool in Singapore and the quality of learning programmes suited for academic librarians. Thus, it was deemed necessary to design and develop a holistic Workplace Literacy programme in the form of a Learning Framework, which consist of a compendium of learning programmes. The presenter will share the modes and modalities of selected programmes and their learning outcomes. Vignettes of the revamped Learning Circle based on survey data will be shared and participants will hear about a holistic programme that incorporates faculty engagement, free choice learning, and conference sharing, with the main message of doing more with less. Participants will gain practical tips they could use in their own institutions. "Refresh!: Getting Ready for Term 1" is a dedicated Learning Week where all staff are involved in "sharpening the saw" before the start of the term to help them gain the competitive edge for a customer-focused service excellence delivery model.

The presenter, in his role as Head, Learning services, will discuss LaGuardia's (1993) early comment about how most of the learning and experience for instructional librarians is obtained through 'trial by fire,' and share how instructional librarians teaching information literacy are coached and mentored to nurture a team of passionate librarians. Should libraries have a talent management strategy; how future-skills -ready are librarians? What is the Singapore government doing about workplace literacy for librarians? Answers to these questions will form parting thoughts by the presenter who will also share some practical take-away tips.

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Keywords: *continuing professional development, workplace learning, academic libraries, information literacy, programmes*

Flipped Learning's Use of Information Literacy Classroom in Academic Libraries. A Case Study of Northeast Normal University Library

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Information literacy is one of the most important skills for lifelong learning. Our university library has been making great efforts at improving students' information literacy through efforts such as classroom instruction and online micro videos. Flipped learning is a way of teaching that makes the students the center of the learning experience while they explore problem-oriented learning through their teacher's inspiration. It is proven to be an effective way to inspire students' self-learning ability. Since early March 2016 we have applied the flipped learning method in information literacy education in order to enhance students' information literacy skills. pplied.

The whole activity includes three parts: pre-class study, class discussion, and after-class reading.

In pre-class study the eacher would share video or multimedia materials through social network software and ask the learners to watch the materials before class. This process of studying material before class is an important part of the whole flipped learning activity.

Class discussion is mainly based on the learners' thinking and discussion, such as brainstorming. The teacher would give the learners some questions if needed. The teacher would administer a questionnaire asking the students to report on their feelings about the class in order to identify suggestions for improving the activity.

In the after-class reading, the teacher proposed expansion materials or questions for learners' further study.

Although it is not a normal classroom instruction, the teacher still need to design the teaching plan.

After more than a year, we have already held 12 activities. The content of the courses covered many aspects of the skills students needed to become information literature such as academic writing, search skills, and efficient learning. The learners who attend the activities all give good feedback through the social network software. Flipped learning can effectively improve learner's information literacy as evidenced through the questionnaire feedback and direct communication.

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Keywords: *flipped learning, information literacy, academic library*

Information Literacy Presented in a Blended Learning Environment

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For more than a decade, Chalmers library has offered information literacy instruction in conjunction with the BSc thesis. The instruction is mandatory for approximately 500 students and up until 2016 consisted of a lecture and a workshop. Due to unsatisfactory evaluations, we applied for funding from the university to create an online module.

In this presentation, we will discuss the new course approach, the development of the online module and how it was received by the students.

Inspired by previous blended learning research (Zhang, Goodman and Xie, 2015, p. 948-949) and after deliberation with stakeholders, we identified the following themes for the online module: evaluate and identify sources, avoid plagiarism, cite correctly, and respect copyright law (ACRL, 2006). After having completed the online module, we met the students in a mandatory 30 minutes tutoring session. We also offered on-site reference management workshops (Mendeley and EndNote) and short lectures on how to find subject specific information.

The online module was created in edX Edge with professional production support from in-house instructional technology designers. Each theme consists of videos and learning activities with a variety of exercises and a final quiz. The most challenging task was to write the scripts for the films and to create meaningful exercises. The other obstacles were to learn new technical platforms and technical issues due to the interplay between the different systems.

Both our internal and the main course evaluation (for BSc thesis) demonstrate an increase in student satisfaction. Based on the written comments in the evaluations and in discussions with the students, we also note that they appear to have gained new knowledge which was helpful to them in the writing process. Furthermore, we experienced that the students reflected more on how they evaluate and use information when we met them in the tutoring sessions. Our results are consistent with Zhang, Goodman and Xie (2015) as well as Magi and Mardeusz's study (2013).

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Keywords: *information literacy, blended learning, online module*

Faculty Workshops in a Diverse Environment: Creating a Library Workshop Series in a United Arab Emirates University

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Zayed University, with campuses in Abu Dhabi and Dubai, is a federal university of the United Arab Emirates and was founded in 1998. While the student body of ZU is primarily Emirati nationals, the faculty come from an extremely diverse array of countries and graduate educational experiences. The primary language of instruction at ZU is English, and this is the second language for many of the ZU faculty.

The Zayed University Library & Learning Commons has offered sporadic workshops for faculty over the years but, in 2016, the librarians on the Abu Dhabi campus decided to offer a formal library faculty workshop series in the fall semester. We offered a series of eight workshops based upon what librarians believed would be popular with faculty, including several highlighting new library databases. The plan was to offer a series of workshops, evaluate each workshop, and then meet as a group to plan our way forward.

The reception of the fall workshops was positive, even if the attendance was less than desired. In order to improve our workshop efforts in the Spring 2017 semester, we conducted a Library Workshops for Faculty needs assessment survey before the fall semester ended. The survey revealed that we needed to focus much more effort on helping faculty in conducting literature reviews, placing their research into Scopus-indexed journals, and measuring their research impact. The survey also showed that there is a need to provide SPSS, NVivo, and statistical methods and modeling instruction, but the library is not currently staffed to meet these research needs.

Based off our fall 2016 experiences and the survey results, the Abu Dhabi librarians met and planned the spring 2017 series of workshops. The six workshops that we scheduled for the spring 2017 semester (one workshop per week, and the series repeats mid-semester) are:

- Finding Articles Using the ZU Library Databases
- Finding and Using Books and eBooks at ZU
- Jumpstarting Your Literature Review
- Using the Arabic Databases at ZU
- Where Should I Publish My Article?
- Measuring your Research Impact

As with the fall series, the attendance for the workshops have been sporadic. We received excellent feedback from the faculty in attendance, but despite campus advertisements and liaison librarian announcements, we had a few workshops with no attendees. As we are still in the beginning stages of this ongoing faculty workshop development cycle, we are using these successes and failures to shape our ongoing faculty outreach efforts.

In both workshop series, the attendance by non-western ZU faculty has been noticeable. Undergraduate and graduate education varies widely around the world, and we have found that the Arabic faculty have been receptive to learning about the English-dominant databases in their disciplines in addition to the growing collection of Arabic language library database offerings. This experience is leading us to consider new efforts of outreach to our Arabic speaking colleagues. In addition, all ZU faculty are under pressure to publish in Scopus-indexed journals in hopes of increasing the university's international profile and rankings. Keeping an ongoing series of faculty workshops that correspond to their needs will be essential as the Zayed University Library and Learning Commons seeks to address the information literacy needs of all its users.

Keywords: *workshops, diversity, faculty information literacy, needs assessment*

“Flashbook” Didactics as a Form of Book Promotion

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A “Flashbook” is an innovative form of library work that pursues active popularization of books in social networks. This “flash-mob book” appeared on the internet relatively recently and simultaneously in different social networks. The initiators proposed to create a “FanPage” in the name of a certain book and invite their friends to it.

Last year, before the day of Ukrainian Literacy and Language on the 9th of November, the Dnipro Central City Library (Ukraine) began to use this form of book promotion. Bibliographers presented a publication in the form of a flashbook. They called this particular flashbook “The dictionary of Boris Grinchenko” as it representsthe pinnacle of Ukrainian lexicography of the 19th -the first half of the 20th Century”. These four volumes “Dictionary of Ukrainian Language” by Boris Grinchenko was published from 1907 - 1909. As the face of the Ukrainian nation, the Dictionary is a landmark event of prerevolutionary lexicography and the summary of work of several generations of the Ukrainian linguists. Ethnographic and folkloric records served as its source, the records of which record words designating details of living and everyday life, everyday crafts, traditions and cultural accomplishments of the Ukrainian people. This dictionary has over 68,000 registered words. It presents the vocabulary of the literary (educated) language of the 19th century as well as folklore and a number of Ukrainian dialects. It provides rich and often unique illustrative material. On a “page” of the flashbook are all the materials from the exposition of the Grinchenko museum. All kinds of dictionaries are represented: translation, interpretive, orthographic phraseological, etymological, toponymic, dictionaries of synonyms, paronyms, antonyms; illustrations of some of the interpretations of separate words, materials from the Memorial Museum of Grinchenko Village (Oleksiivka, Perevalsky District, Lugansk Region), the documentary movie, “Boris Grinchenko. Catcher of words”, and photo information.

Another example of a Flashbook is “Legends about the Cossacks” by Elina Zarzhitska. This “page” is regularly supplemented by new materials. Employees of the library hold information educational events on Facebook. For the first book, they’ used two collections of fairy tales and legends by Zarzhitska. Her stories, “Legends about Cossacks” and “The Story of how a cossack was a servant to the sea czar”, are based on the history of the Dnieper region and Dnipro city. On this “page” one can find excerpts from Legends that are accompanied by the illustrations, creative works of the young people, citations on the topics, folk sayings and proverbs, and audio and video materials.

These and other examples of the creation and use of flashbooks in the teaching process testify to the emergence of the New Concept – flashbook didactics as essential aspect of Internet didactics. The examples cited do not limit the possibilities of Flashbook didactics only to the library sphere. Teachers or just lovers of literature can also create “pages” from their beloved books alongside with students, publishing houses, and other specialists.

Keywords: *flashbook, information activity, social network, book promotion, flashbook didactics, media didactics*

Students Get to Know about Workplace Knowledge Practices

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The aim of this paper is to describe a new way to improve students' workplace knowledge practices in Laurea University of Applied Sciences Library (Finland). The practices include skills to: find open access information produced by core organizations from different professional fields; to search for information critically and efficiently; to use licensed e-resources available in working life; and skills to be involved in professional networks. Developing a workplace information study environment began in 2015. Currently it is designed by collaborating with alumni, building networks and analyzing publications. The information is shared with students in order to advance information literacy skills after graduation.

Collaborating with Laurea alumni is a new way to find up-to-date knowledge about everyday work, which benefits students. The library has worked since 2015 together with Laurea Alumni Relations Coordinator. The library organizes pop ups during alumni events in order to network and share ideas. It is also important to network with lecturers, who are constantly working with students in working-life projects.

A useful source for working life knowledge is Laurea's alumni lecturers. Some have been interviewed with questions: What information sources do you use in your work? What information skills should be taught to students? The interviews are saved on an open wiki 'Mastering information at work', which was launched together with Metropolia University of Applied Sciences Library (Finland).

Laurea and Metropolia Libraries collaborate in alumni issues. Results so far of the collaboration are the above-mentioned wiki and seminars for library staff. Working life experts from different fields tell about workplace knowledge practices and thoughts about information literacy guidance.

In addition, a way to collect information is to analyze Laurea publications with experiences from Laurea graduates. A library working group is presently reading such publications with an eye for remarks related to information literacy, for example one with alumni interviews.

The identified workplace knowledge practices are implemented in information literacy guidance. For example, an IL-online course has an alumni interview video as inspiration material or guidance in class introduces both licensed and open access e-resources on accounting. The importance of professional networks in information sharing can be discussed with students.

It has come up that some licensed e-resources are similar in the library provision and working life, especially in health and business fields. Students can master using these e-resources before graduation. Links to core organizations from different professional fields are added to a multidisciplinary online information guide, Laurea LibGuides, which is accessible to all.

Emphasizing workplace knowledge practices to students is in Laurea Library's goals 2016-2020. The library's role is to enhance skills for lifelong learning. This can be done by designing a working life study environment, which is a natural part of the library's overall information environment. The work has just begun and students' experiences have been followed. The first feedback is positive. This new way seems beneficial, but it is important to evaluate the outcomes further.

Keywords: *workplace knowledge practices, information sharing, study environment, co-creation, alumni*

Reaching Out to a Wider Audience: Meeting the Needs of Distance Learning Students

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Purpose

The *Study and Information Centre (SIC)* serves as a central academic library of the Czech University of Life Sciences (CULS). The information literacy programmes are important part of the library services. The entire library department is focusing on designing courses and creating teaching materials. Developing partnerships with faculty members and university departments is a crucial task as well. The presentation will focus on sharing experiences with designing online teaching and learning environment for students of distance study programmes at CULS. An important part of the process is research on user needs of the particular target group: distance learning students at CULS. Research results provide the basis for developing new e-learning tools for teaching information literacy focused on the students not present at the university campus on daily basis. Additionally, the presentation will focus on the cooperation of the library as a provider of information literacy courses across the university.

Research background

Based on several years of experience teaching IL courses, SIC has decided to develop a new online learning environment focusing primarily on students of distance and combined (part-time) study programmes. Various approaches and tools have been considered, based on available literature (such as Catalano, 2015). The aspects of situated learning and collaborative learning (Pérez-Sanaugustin, 2015) environment were aimed to be introduced. The role of librarians in the online learning (Burgoyne & Chuppa-Cornell, 2015) has been discussed along the way, as the project evolved. The common characteristic of students of distance learning programs is that most of them are employed full-time. They have various reasons for studying. The uniqueness of students who have decided to continue their education at an older age is that they have less experience using information technology than the younger generation. It also can mean different information behaviours and needs than those which we know from younger students who are focused on short and fast information consumption. The optimal e-learning tools are able to meet the needs of both groups of students.

Methodology

Research methodology is based on three pillars: 1) Quantitative research through an online questionnaire discovers the needs of the largest possible number of students (thematic focus); 2) In-depth interviews will be focused on a detailed concept of e-learning tools (such as length and type of videos, ways of testing and practicing newly acquired knowledge) and 3) user testing of the course *(coming up in Fall 2017)* and adjustments based on the received feedback.

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Keywords: *information literacy, academic library; distance education; e-learning*

When School is Work: Learning Goals for Education PhD Students

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Objectives

This study aims to address: What issues motivate graduate students to further their own information literacy practices? How can librarians teaching adult learners or graduate students make use of students' life experiences and goals to increase motivation during information literacy sessions? And how can information literacy instructors use learning goals as a motivational teaching tool?

This project draws on theoretical foundations of workplace information literacy (Lloyd, 2004), metaliteracy (Mackey & Jacobson, 2014), self-efficacy (Bandura, 1977), information literacy self-efficacy (Bronstein, 2014; Kurbanoğlu, 2003), and goal-setting theory (Locke & Latham, 2002; Schunk, 1990) to investigate these questions and suggest best practices for librarians teaching information literacy. Teaching practices and research have not always taken a holistic approach in considering adult learners' perceptions of their own self-efficacy within information literacy, or their prior metacognitive and metaliterate experiences. As teachers transition back to graduate programs in education to become academic scholars or return to the field in leadership roles, the importance of these self-reflective abilities combined with information literacy abilities becomes paramount.

Methodology

This study uses mixed methodology, combining an explanatory sequential design with an intervention design to gather both qualitative and quantitative data. Education PhD students in their first and second years completed structured reflections, the Information Seeking Self-Efficacy Scale (IRSES) (Bronstein, 2014), and a brief focus group to reflect on self-set learning goals and the evolution of their information literacy practices over the course of three research workshops during spring semester 2017.

Outcomes

While exploratory in nature and highly personal, students' reflections illuminate possible pathways for librarians to facilitate increased ownership and agency within information literacy teaching of adults by incorporating students' goals, prior experiences, and future career paths and drawing clearer connections among lifelong learning behaviors. This presentation shares best practices for using student-defined learning goals during information literacy instruction.

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Keywords: *information literacy instruction, adult education, learning goals, metaliteracy, self-efficacy*

Libraries and Privacy: the Birth of an Online Course

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Introduction

In the summer of the year 2016 the librarians at the University Library of Nijmegen were asked by the Data Protection Officer of our University to build an online course on privacy and data protection issues. The reason the officer asked this specifically of us, was because of our ample experience in designing e-learning modules and – of course – since we, as a library, not only serve as information brokers and data protectors in terms of Research Data Management, but also because we want to raise awareness of the fact that every piece of information has value. As stated in the new ACRL standards[8], it is one of our tasks ´to teach the students to make informed choices regarding their online actions in full awareness of issues related to privacy and the commodification of personal information.

Methods

We started by collecting information about privacy issues and in particular about the protection of personal and company data – a relatively new field for us. We dived into the world of passwords, encryption, the dangers of the using gmail, dropbox, webcams and the consequences of losing your laptops, smartphone and USB stick.

Of course, we were to some extent aware of the dangers of the Cloud (and of extensive usage of Google), but it is another thing if you look at the full scale of it. Above all, are the dangers of the sanctions[9] (up to € 20,000,000) if the university leaks personal data of, for instance, test persons.

This made us even more motivated in our wish to design really exciting and interactive material for the students. As part of that design, we are planning to experiment with some new features in our e-learning software (Xerte Online Toolkits), for instance the decision tree and the media lesson. We hope the resulting course will be embraced by all faculties and becomes mandatory for all students of our University.

Result

The final result will be shown in September at the ECIL-conference.

Keywords: *e-learning, information literacy, privacy, data protection*

[8] http://www.ala.org/acrl/standards/ilframework

[9] https://en.wikipedia.org/wiki/General_Data_Protection_Regulation

A Comparison of Lessons In 4th Class of Primary School Children

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Research background

The main target of my paper is to compare the impact of information safety lessons on school pupils (4th class – children, ages 9-10 years) from three different types of schools (traditional, Dalton school and new experimental ScioSchool). The lessons are focused on the identification of risky information and basic safety principles of on-line communication. Children engage relatively often in risky behaviour (Kovarova, 2013) but have limited information about suitable behaviour, or information about basic protection. This paper focuses on three aspects:

- Does the lesson work in all types of school for children of the same age?
- How do the children react to the contents of the lesson?
- Does the lesson bring better awareness of risky behaviour on Internet?

According to research by EUKidsOnline (EUKids Online, 2011), it is clear that 13 percent of school children send their personal photos to "no-name" persons and more than 50 percent agreed to engage in personal contact. They need to be aware of this risky behaviour. It is necessary to plan the lessons in a suitable way that corresponds to their way of learning (MAREŠ, 2013).

Objectives and methodology

In order to achieve the main target, we prepared a PRE- and POST- test, observation, and the use of smile sheets as a way to obtain feedback from the children. One hundred and forty-two school children took part. There were 7 lessons in the library. All lessons took place in two different libraries. After the comparison of the PRE- and POST- tests, we saw an improvement. The lessons were evaluated positively by the children as evidenced on the smile sheets and the feedback from the teachers brought some new ideas.

Outcomes

There are many types and approaches to children´s education. In our lessons, we try to present new topics to children concerning the information safety area and in all lessons, we put emphasis on an active approach to their own education. My paper presents the results of a comparison of three different schools and presents an idea how a library could provide information safety education for children and help the kids find motivation to improve their cyber behaviour. Cooperation between schools and libraries shows positive results. The lessons are an example of good practice and the method shows how we could teach librarians how to help to improve information literacy in such suitable way.

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Keywords: *information safety, children cyber behaviour, risky behaviour, primary school lessons*

A Finnish Academic Libraries' Perspective on the Information Literacy Framework

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In our presentation, we will present the results of an online questionnaire conducted in the spring of 2017 for the academic libraries in Finland about the reception of the ACRL (Association of College and Research Libraries) Framework for Information Literacy (IL) for Higher Education defined in 2015.

For the past decade, research libraries in Finland have developed information literacy education based on the ACRL Information Literacy Competency Standards for Higher Education. In this presentation, we will illustrate the current atmosphere and conversation in Finland around the recently adopted six IL frames. We will ask the librarians, if they are familiar with the ACRL frames and whether they have already implemented some of the six frames in their work processes, or if they are willing to do so in the future. We will ask if they have used the frames in designing IL courses, defining learning outcomes and negotiating IL courses into the curriculum with the faculties. We will also ask how well the IL framework describes the employability skills of students. Our aim is to examine librarians' attitudes towards the IL frames: which aspects they find useful, and which not. We will ask whether the IL frames define the information behavior of our customers and the information environment better than the standards. The questionnaire will be e-mailed to the research libraries and marketed via social media channels and each library will coordinate their views once.

At the moment, it seems that librarians have a positive attitude to the change. The IL frames can be used as conversation starters in library-faculty meetings. The IL framework might also be more flexible than the IL standards. The IL frames leave room for planning different kinds of courses, while giving librarians a new tool to choose the relevant learning outcomes depending on the instruction goals and teaching practices. This presentation will focus on the current IL practices in Finnish academic libraries.

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Keywords: *academic libraries, higher education, information literacy, framework, librarians, experience, collaboration*

Information Literacy and Open Educational Resources (OER)

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High quality online educational learning materials are essential in developing blended learning programs. The amount of videos, PowerPoint, online courses and other material that can be (re)used is growing. There is also an increased need to be able to share our own learning materials. The Dutch Ministry of Education set the goal to achieve 100 percent open education in 2025 (Ministerie van Onderwijs, Cultuur en Wetenschappen, 2015).

To achieve 100 percent open education a substantial amount of work still needs to be done. Libraries could have an important role in reaching this goal (Wild, Vegt, Nauts & Beeksma, 2016). The Universiteit van Amsterdam and Hogeschool van Amsterdam (UvA/HvA) Library have taken a few concrete steps. Currently an educational repository is being established. Furthermore, the library is developing a service to support lecturers.

This service is mainly about supporting lecturers in searching, finding and sharing open online educational resources: the librarian in the role of OER librarian. Often lecturers still find it hard to collect useful information from the growing amount of online educational learning materials. The UvA/HvA Library has conducted a few pilot studies to find out what is needed to offer optimal support. Findings of this pilot studies will be shared.

The librarian also occupies a position as Information Literacy teacher. Online educational materials are used as a part of face-to-face and flipped classroom classes. There is the policy to open up our own materials as much as possible. However, the librarians face the same dilemmas as the lecturers they support. What do we allow others to do with our work? Why do we still not make use of other materials as frequently as we could? The presentation will end with a discussion about these questions.

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Keywords: *open educational resources, open education, blended learning, information literacy*

Information Literacy and Professional Development of Students Graduating from Library Studies in Bulgaria: the Impact of the Indicators for Intelligent Growth in Modern Society of Knowledge

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This research report analyzes problems related to professional realization of Bulgarian graduates in library specialties. The team considers themselves capable of revealing the reasons why young persons do not achieve their realization. (EU Committee of the House of Lords, 2014) The scientific report examines new opportunities for students graduating from library specialties created through the project, "Redesign of Academic Journals in Accordance with Impact Factor Indicators and Benchmarks for Achieving the Smart Growth in Modern Society of Knowledge" under Contract № 02/2 K DFNI of 12.12. 2014 of the "Scientific Research" fund of the Ministry of Education and Science of Bulgaria. We investigate how information literacy helps young people to perform professionally. We present the research and practical contributions delivered by two different research teams. The authors explore the creation of a new applied model. The model will reach the impact factor indicators in the research fields of Bulgarian scientific publications where Bulgarian authors publish. It supports the development of the process of reaching the indicators for intelligent growth via integration of the international and the Bulgarian experiences with new research ideas. The model addressesdeveloping the competencies among young scientists to search, explore, and handle the necessary information as well as provides practical knowledge on how to publish high quality scientific papers, reports, theses, monographs, articles, and research notes. (Stoykova, Dobrinka Atanasova, 2015). Youth care is defined as the most important national cause to ensure European Development of Bulgaria in the National Youth Strategy for the years 2010-2020. (NYS, 2012). The methodology we use to examine and analyze the main problems related to career development of young people relies on legal documents and statistics. The conclusion to which we have come is that it requires the application of an integrated approach to address them. The methods we applied wee: surveys, observation, comparison, and analysis. The chronological frameworks of the research were in the period from 2010-2016.The possibilities for adequate collaboration and continuity between generations is compromised to a high degree due to economic, social, and demographic situations. The main problem is the lack of a sufficient effective mechanism including young persons in the group of decision makers on issues that are important for them. There is often a lack of opportunities for professional realization for young persons; their labor is not valued enough financially. The problem is not that young persons are unwilling to develop themselves due only to a lack of funds but rather it is due to a lack of sufficient information, literacy, and competence to organize and manage. Data on educational characteristics of unemployed youths in Bulgaria are the basis for the conclusion that the bulk of efforts should focus on keeping young people within the education system and on training of persons with primary or lower education to improve their qualification. At the same time, according to the data from the Employment Agency, the restructuring programs at state universities needs to be advanced at a faster pace (Employment Agency, 2016). Youth employment must be a priority, the solution to which requires efforts from all sides so that every young person with potential would want to build himself or herself up along with his or her family, society, and, thus, the State.

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Keywords: *research, analysis, professional realization, students, library studies, strategy, European development, information society, information literacy*

Mathematics Should Never Be Studied Alone: Tales of Creating a Library Space for Peer Tutoring to Improve Scientific Literacy

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We spend hours teaching students how to use the library for their classwork, but we were overlooking the opportunity to help students who are already here, students employed by the library. By embracing different aspects of information literacy in the workplace, specifically in a library, our program brings together workforce development, leadership skills, and critical thinking to promote scientific literacy. Our math homework help program is staffed entirely by students working for the library, under the direction of librarians and staff. These student employees, called Mathletes, provide drop-in homework help for all underclass mathematics courses in the main room of the Math Library. The program has proved quite successful with the student patrons. However, the real success of the program has been what the Mathletes themselves have gained as peer instructors, through meaningful work experience and a supportive community. Our training process emphasizes leadership, mentoring and problem solving. A qualitative and quantitative survey assessment of our program reveals that the work the Mathletes do has meaning above and beyond the money students earn as an hourly wage.

The patrons learn from the Mathletes, and the Mathletes learn from the process of tutoring. Additionally, they also have the opportunity to teach and learn from each other and through mentorship with Library staff. This program fosters a rich relationship between the student workers and staff, which more closely resembles post-university work environments. Meaningful student employment has a positive effect on retention rates, but we also see that this type of work helps student employees increase their confidence and desire to both teach and learn. We hope that this model can be widely adopted in other libraries to help both the students and the permanent employees.

Keywords: *peer tutoring, critical thinking, scientific literacy*

Flip Your Likert Scales to Get Actionable Data

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Teaching information literacy to university students can be a challenge. You craft an interesting, engaging class carefully planned to maximize the time students spend with you. At the end of the class session, you and the students have spent valuable time together, but you want to measure what the students learned about using the library while they were with you. After attending this presentation you will leave with a theoretical model for setting up your information literacy classes with of any kind of library (college and university, school libraries, special libraries, etc.) for your students with two main components (Turnbow & Zeidman-Karpinski, 2016).

First, this presentation will show you how to write learning outcomes using four distinct components to help structure your instruction sessions (Kaplowitz, 2014). Using these as a guide, you will start with a clear idea of what you want the students to know by the end of the class. We will encourage the audience to design and plan for a one-shot class and workshops using learning outcomes that make sense for the time you have with your students.

Second, to see what your students have gained from taking your class, we'll show you how to use a performance-based model to build questions that clearly evaluate what your students did and didn't understand (Thalheimer, 2016). Flipping the evaluation to include clear, actionable information is a powerful alternative to using Likert scales and multiple choice. Used together, this model provides a means to address what students learned and how close you got to meeting your learning outcomes. Consistently using well written learning outcomes and evaluation questions with actionable information will provide data about what worked and give the instructor insight into what to change for the next time. It's easier than you think.

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Keywords: *assessment, teaching and learning, instructional design*

The Changes from Information Literacy Education to Innovation Literacy Education: The Cases of Chinese Academy of Sciences

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The changes from information literacy education to innovation literacy education in the past decade in the Chinese Academy of Sciences (CAS) are introduced, including the organization structure, the core course system, and the teacher development and technology support. Finally, the development direction of information quality in the future is discussed.

Introduction of Chinese Academy of Sciences

As the topnotch research organization and a degree-granting institution of China, CAS currently has more than 42,000 researchers and an enrollment of more than 44,500 post-graduates. There are 117 CAS research institutes, which are strategically placed in 32 major Chinese cities throughout the country. CAS has a two-stage education mode: in the first year, all the basic courses are taught at the campus in Beijing, then the research will be conducted and the students' dissertations are completed under the guidance of their tutors.

Organization Structure of Information Literacy

Information literacy education has been performed at CAS for 10 years, with a continuous and collective effort of the Librarians at CAS libraries（The National Science Library of Chinese Academy of Sciences）. The National Science Library in Beijing provides information literacy credit courses for the first-year students on the campus. The National Science Library and its two branch libraries in Wuhan and Chengdu, working closely with over 100 institutional libraries, provide information literacy lectures and seminars as an integrated network catering to the needs of 117 CAS research institutes.

Core course System of Information Literacy

National Science Library has offered information literacy instruction since 2006, and now has stretched to innovation literacy education. We have developed five kinds of credit courses: Information Retrieval, Information Analysis, Research Data Management, Scientific Methodology and Scientific Writing. In addition to providing face-to-face courses, we also provide MOOCs and online training for students through our website. Each year, there are over 2000 students who take our credit courses and over 5000 students and researchers who take part in our lectures and seminars.

Teacher Development and Technology Support

There are more than 30 highly trained professional librarians of National Science Library who were hired both as a librarian and teaching faculty. We are working to improve the quality of information literacy education and innovation literacy education at CAS by instruction programs, resources, and technology supports.

Future Directions

Beyond the information literacy, we are trying to develop new education content that can cover all capabilities through the whole research process, focusing more on the transition from information literacy to innovation literacy.

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Keywords: *information literacy, innovation literacy, organization structure, course system, teacher development*

PECHA KUCHA

Workplace Information Literacy: Competency of Library Professionals at University Libraries in Karachi, Pakistan

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"Information literacy" (IL) was first introduced as a concept in 1974 (Zurkowski, 1974). Knowledge is now seen to have a central value to workplaces to that extent that it is not enough to be able to locate, access, and organize it (Lloyd, 2013). The Pakistani context of IL competency was discussed by (Mahmood, 2003; Ameen, 2009) and a parallel employer domain version study was conducted in 2012 (Mahmood, 2012). Workplace IL is an area still neglected in this context of the library professional in Karachi, Pakistan. This study is an attempt to fill this gap in the literature.

ILis an essential librarian tool. The purpose of this paper is to example the basic work place IL requirements needed by those working in library professional posts in the Universities of Karachi, Pakistan. A secondary aim is to support the course development process by identifying the specific IL knowledge and skills that are presently in demand in the workplace. A third objective is to determine whether librarians have completed any professional training on IL as a workplace requirement.

This is exploratory research. Survey methodology was used for this study with aquestionnaire as the research tool. Data were collected through an online Googledoc form sent to working librarians in in the universities of Karachi. Library experts tested the questionnaire for reliability and validity of the questionnaire. Interview were conducted for the library experts. Respondents were asked to rate 20 subject-specific and 12 generic competences in terms of their importance for the profession and their personal level of the achievement.

Due to time constraints, the wtudy was limited to library professionals working at university level. The work is original work. No pervious study has been conducted by any researcher in the context of IL in the workplace**.**

IL is the continuous part of lifelong learning and closely associated with technological development in library profession. In this study we found most librarians were unaware of their need for workplace IL. Few librarians need training in the context of modern ILcompetences. Only few library professionals deliver ILlectures to their patrons. Continuing study may prove fruitful to library professionals, university librarian heads, library schools, researchers and experts who desire to help university library staff meet the needs of understanding and providing of IL in the workplace.

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Keywords: *information literacy at work place, library professional, job skills, university librarian, job description, job analysis, workplace learning*

Scatter of Information Literacy Related Information in Scopus and Web of Science According to Power Laws

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Objectives

A few well-known journals in both Web of Science (WOS) and Scopus account for a majority of information-literacy-related (IL) publications. However, many journals in other research fields also publish IL articles (Aharony, 2010; Pinto et al., 2013; Lipitakis, 2016). Assessment of databases needs to take into account functionalities, classification, and other analytics. Distribution of articles (based on titles) by journals and subject categories has also been studied with regard to power laws (Bartol & Stopar, 2015). Related research also addressed IL (Tsay & Fang, 2006; Lariviere et al., 2012). Our research-in-progress assesses and compares IL scatter in both databases.

Methodology

In addition to IL we also employ other terms, such as data-, digital-, computer literacy (and related). We address search and classification differences in databases. In WOS, either titles or topics (titles/abstracts/keywords) can be used; abstracts or keywords cannot be searched separately. Scopus permits separate searching for these elements. Both databases use broader classification: Categories/Research Areas (WOS), and Subject Areas (Scopus). We compare the share of records with titles-only retrieval as well as topics, and assess scatter of records in journals (and similar sources), and map records to categories/subject areas using refine options and related search-results analytics. Distribution of records/sources/categories is assessed for the last 20 years.

Outcomes

Thousands of papers are published in hundreds of journals. Core journals account for most papers, in WOS usually indexed to the 'generic' category of Information Science & Library Science. Other categories lag behind. In Scopus, categorization is less precise and is mostly attributed to Social Sciences in general. A few specialized journals publish more than a hundred such articles each. Several hundred different journals publish only one IL-related article. Such scatter is clearly inverse-proportional in rank and frequency, which is characteristic of power laws (linear on log scale) - most notably the Bradford's law. Scatter is pronounced if the query is conducted on topics. Title terms exhibit a more 'streamlined' distribution, however, the inverse-proportional pattern is also manifest. Many records are mapped to other disciplines outside social sciences. This shows the importance of IL in other scientific fields and may also reflect activities of librarians and information specialists who participate in research. This also indicates interdisciplinarity of IL research and subsequent promotion of scientific literacy.

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Keywords: *power laws, scatter of information, science mapping, bibliometrics, databases*

Perceived Information Literacy Skills among LIS Students Enrolled in Public Sector Universities of Pakistan

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Information literacy (IL) is part of librarianship but is not restricted to library materials only (Spitzer, Eisenberg et al. 1998). It is the ability, not only to find the information but to appreciate it, assess it, and use it properly (ACRL 2000). Library and Information Science (LIS) students have to impart LI and to offer IL as ingredient of the library operations. This study evaluated the IL skills of LIS students in Pakistan.

Objectives

The study is carried out with an objective to report the level of information literacy skills among LIS students enrolled in public sector universities of Pakistan.

Methodology

A survey is carried out in all the seven public sector universities that provide LIS education in Pakistan. A four-part questionnaire was developed after reviewing the literature and distributed among all the enrolled students in their final semester of studies for their master's in LIS (MLIS). The first part of the questionnaire was comprised of questions relating to the ability to identify the information. The second part consisted of questions regarding the ability to manage the information. The third part was comprised of questions regarding the ability to evaluate the information and to communicate the information. The ethical use of information was included in the fourth part of the questionnaire. Respondents were asked to rank their IL skills on a five-point Likert type scale, ranking their responses from "poor" to "very good". All the enrolled students participated in this study (N=240); response rate was 100%. Faculty members at the participated universities served as study facilitators; their main role was to lend the support in their institutions for data collection. The collected data was analyzed by using SPSS-21. The data are presented in frequency, percentages, means, and standard deviations.

Outcomes

The findings of the study indicated that majority of the respondents ranked their ability to identify the information, manage the information, evaluate the information, communicate the information, and the ethical use of information as "good". One of the main limitations noted in this study was that the IL skills recorded in the survey was self-reported by the respondents. This may lead to bias. To yield more conclusive results it is recommended that another study may be conducted in computer labs, class rooms, or libraries where students may be given a task to perform and, thereby, may be assessed in a real practical environment in order to identify their IL skills.

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Keywords: *information literacy skill, digital literacy skills, LIS students pakistan, IL competencies*

Children's Information Literacy: a Suggested Framework for Primary Schools in Pakistan

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This paper presents doctoral research exploring information literacy (IL) practices in primary schools of Pakistan through a qualitative multiple case studies method. In particular, it reflects on the methods used to collect data from young children (5-7 years) via focus groups and presents findings from task-based activities in the focus groups. IT proposes a context-based IL framework for primary school children. The data (documents, interviews, focus group and observational data) were collected from six accessible public (government) and private schools of Lahore (city). The data were analysed through the Nvivo 10 software to investigate the IL skills among children with or without library facilities, using both the case study approach and situational analysis.

Some researchers claim special research methods should be used for children: e.g. Punch (2002) claims that research methods should be different for children because they are under adult control and experience limited power. It is difficult to understand the world from the child's view through traditional methods. It is therefore recommended to use innovative and task based methods to make children comfortable and confident (Punch, 2002). In this research, task based activities were adapted from the literature (Irving, 2010; Ryan, J. & Capra, S., 2001) and modified to use in the local context to examine the school children's IL skills. Irving (2010) was very influential in having identified and integrated different IL activities (finding and using information, organizing information, understanding, analysing, and evaluation) in the Curriculum for Excellence, Scotland. Activities were also adapted from an IL toolkit (Ryan, J. & Capra, S., 2001) that were especially recommended for grade one and two-level children (5-7 years of age) to develop their IL. This study attempted to select activities from that literature that were representative of all six basic IL skills (finding, organizing, recognizing, understanding, using, and presenting information) at grade one and two educational levels. Therefore, six task based activities discussed above were adapted and used with participant children.

This study contributed to the literature by using task based activities for IL skills evaluation. The findings propose an IL process-based iterative framework for primary school children in Pakistan. The task-based activities' results show that participant children lacked basic literacy skills in reading, writing, listening, and speaking. To make children information literate, this study advises the development of basic literacy skills in connection with IL skills. This framework highlights which areas should be prioritised and could be integrated into the curriculum. It provides a basis for further research and discussion in the IL domain focusing on the Pakistani context.

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Keywords: *children information literacy skills, case study, primary schools, information literacy framework*

#EstasON Cyberliteracy Campaign a Digital Skills Acquisition Project to Promote People's Empowerment

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One of the government measures under Barcelona City Council's new Digital Transformation Plan (2016) is aimed at empowering people, providing digital skills and promoting active-participation tools. As for the skills acquisition initiatives in the city and therefore those under this plan, it is chiefly Barcelona Activa that is running them while Barcelona's libraries are establishing themselves as the most suitable facilities for bringing about such initiatives.

The project has a twofold strategic goal:

- Encouraging job placements and improving the employability of unemployed people, helping them to get back to work, retrain professionally and acquire new skills, under an information and communication technology (ICT) communicator profile.
- Contributing to enabling citizens obtain digital literacy and acquire skills under a free training-activities programme in Barcelona's libraries, with subjects adapted for various public sectors.

Barcelona Activa has chosen 20 unemployed people to take part in a project as trainers on the digital literacy and skills acquisition activities programme to be held in the city's public libraries. The project will last six months, from November 2016 to May 2017, under the following schedule: 1 month of trainer training, 1 month of specialised training, 1 month of training preparation and 3 months of carrying out courses in the city's public libraries with the following range of training offers:

a) **Scratch training programme – 12 two-hour sessions**

Training for children ages 7 to 12 in basic programming tools using Scratch software.

b) **Booktuber training programme – 4 two-hour sessions**

Training for young people ages 12 to 17, to promote reading based on audiovisual formats. Using video editing tools, oral and written expression techniques and social-network promotion skills.

c) **Beginner's digital training programme – 4 two-hour sessions**

Training for people over the age of 55 to introduce them to the digital world, dealing, among other things, with the use of new mobile devices, multimedia tools and access to the Internet.

The project is being held in 30 of the city's public libraries and some 65 children trained in Scratch, 270 young people trained as Booktubers and 800 over-55s trained in using mobile devices are expected to have benefited from it by the end of April 2017. In addition, 20 unemployed people received training that will be of use to them in their personal job-hunting projects and work placements.

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Keywords: *public policies, digital literacy, public libraries, Barcelona's libraries, public services, employment, Barcelona Activa, Cibernarium*

Dominant Traits of the Information Behavior of Vietnamese Immigrants in the Czech Republic: Influences on Building their Information Landscapes – Preliminary Paper

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The structure of immigrant communities in the Czech Republic differs extensively from its counterparts in other EU countries such as Sweden, Germany or France. The Vietnamese community is one of the largest in the Czech Republic. It has been in the focus of other research disciplines for a long time. However, the information behavior of Vietnamese newcomers has not attracted systematic attention from the side of information professionals yet. An in-depth understanding of their information landscape may represent a critical facet with strong influence on the potential success of the overall integration process (Lloyd, 2015). In the presentation, the mid-term results of our research are introduced with emphasis on the main characteristics of the community that distinguish its information behavior from other immigrant groups. The following research methods have been applied: semi-structured interviews and analysis of documents and materials. Research questions are related to: a) the scope of the information needs of the target group in its efforts to establish and integrate in the Czech society; and b) the specifics of the process of searching and selecting relevant information sources. The outcomes shall serve not only to a better understanding of the information behavior of the specified target group, but also as the starting point for the improvement of structure, quality and format of information services provided by public libraries and other institutions.

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Keywords: *information behavior, immigrants, Vietnamese, survey*

Information Literacy in Street Lighting Industry: Content Curation with Scoop.it

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Knowledge management relied classically on published primary sources such as books, articles and patents published in specialized specific journals covered by databases of published literature and patents, as well as information from secondary and tertiary sources. In industries, oral information circulates in national and international professional meetings and exhibitions. Nowadays, online open access journals, online catalogues and websites from companies, as well as blogs, are flourishing, and many of them also use social networks such as Twitter, Linked-in, Facebook, You-Tube, and Instagram to present new products, or discuss novelties, but professionals often lack time and/or information specialists' competences for this purpose.

Content Curation is still a new concept, appearing in the US in 2009, and in France in 2011. The word comes from 'curators', people in charge of collections and exhibitions in museums. Curation associates collection of relevant information, first aggregation and selection of information, then editorialisation, commenting, tagging and finally sharing. It is proposed for Content Marketing purposes by developers of such tools which offer to help and involve businesses to collect the best content related to a specific niche, and target it to a specific audience while adding personal opinions and expertise. The activity can be done by individuals, or in a network fashion, inside a company or in external public or private research settings.

This paper will describe experience of curating information focusing on the niche of street and urban lighting since the beginning of 2012, and illustrate the potential of the method for specific knowledge management and information literacy of working professional end-users.

Contents collected in the main topic focusing on "Lighting, Innovation and Design" covered technical evolution of products, for instance the enormous developments of LED technologies, the implementation of solar lighting in developing countries and the evolution of big data management in smart city projects.

Elements documenting the attitudes of policy makers and of laypeople towards costs and consequences of money shortage in some cities and countries, with potential security problems and on the other hand light pollution in urbanized areas, with environmental consequences on diverse animal species were collected.

Positive and negative reactions after implementation of new lighting devices in cities and countries can also be approached on a local and global level giving access to a large amount of societal data and material.

Subsidiary topics related to Lighting and Art, Lighting in History complement the main one.

The resources were rewarded by the label "Année LUMIERE 2015" and are listed under the title "Lumières en Rues et en Ville" by the National Committee "Lumière et Société".

Such content curation activity of available web resources appears mandatory, to be followed by industry companies, policy makers and by researchers involved in architecture, lighting industry and city developments. It covers as well a technological watch for developments of new devices, and the sociological implications of technical and economical choices. It allows access to sources of information for which the users would never have searched. Such content hubs maintained by specialists and professionals should become new ways of managing and exchanging global information in industrial niches.

Keywords: *information literacy, content curation, Scoop.it*

Information Needs, Information Behaviour, and Scholarly Information Literacy amongst PhD Students: an Interview-Based Study

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This Pecha Kucha presents the results of the second part of a research project mapping PhD students' information needs and behaviour at Chalmers University of Technology in Gothenburg, Sweden. The study also covers the topic of scholarly information literacy defined as the information-related skills, abilities and competences needed to achieve the PhD degree and develop as a researcher (Association of College and Research Libraries, 2016). The findings from the first part of this project were presented at ECIL 2016 (Johansson & Schirone, 2016). The basis for this presentation is one pilot and nine semi-structured interviews.

The interviews were conducted with doctoral students from the departments of Computer Science, Chemistry, Technology Management, Architecture, Applied Physics and Applied Mechanics and were 45 minutes long. Amongst the respondents was also an industrial PhD student (employed at a private company) who provided useful insights on the subject of information literacy in the workplace. The questions in the interview guide were semi-structured and mirrored the online survey conducted for part one of this project. The different sections in the interview covered topics such as demographics, library use, how to review the literature, publishing, Open Science, how to stay up-to-date and patents as an information source. The interviews were fully transcribed using speech-to-text converter software and imported in the qualitative analysis software NVivo for coding. We clustered the most recurring codes into main themes for the subsequent text analysis (Sundin, 2008; Pilerot, 2015; Pilerot and Limberg 2011).

Our presentation will be a visual interpretation of the central themes which emerged from the data analysis. Dominant findings from the interviews include, but are not limited to, the following: (a) PhD students regard personal contacts with peer researchers and supervisors as highly important; (b) conferences are valuable information-sharing venues; (c) young researchers are affected by information overload which results in current awareness tools and services being unsubscribed; and (d) PhD students would benefit from additional research data literacy instructions.

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Keywords: *scholarly information literacy, PhD students*

Information Literacy in Portuguese University Context: a Necessary Intervention

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Due to the Bologna process, but also in light of technological and communication changes, the current context of higher education requires a reconfiguration of the way we learn (ACRL, 2012). Driven to deal with new learning environments, students must handle information, know how to choose it, interpret it, evaluate it, and use it (ACRL, 2000; 2015). It is therefore necessary to value information (in itself and for what it represents in terms of rights and the exercise of citizenship), and understand that its domain, that is, its literacy, is an essential investment in the context of higher education (Allan, 2010). A group of authors from various quarters came together in a research group – Grupo de Investigação em Psicopatologia, Emoções, Cognição e Documentação, Information Literacy in the University Context, based in ISPA, Instituto Universitário – in an attempt to respond to a gap that exists in Portugal: the lack of a book in Portuguese to meet the needs of professionals working on this theme (Horton, 2016). Based on national and international contributions, with the newest developments in this field, this open access e-book (Lopes et al., 2016) seeks to anchor information literacy in theoretical research to sustain practices, but also to present exemplary cases for inspiration and replication in different educational contexts (Sayers, 2016). It presents ideas and shares experiences, broadens horizons and sheds some light on the national panorama as regards information literacy, barely visible before this initiative. Different formulations, perspectives and approaches seek to provide diverse, extensive input and to respond to the challenge laid down by professionals of this area (especially those intervening in higher education libraries) who have interacted with the authors over the past few years. The purpose of this paper is to describe the challenge which motivated this research work, explaining and encouraging improved learning and academic achievement, through awareness of concrete action by the professionals who develop their action with and for information literacy, in the higher education context.

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Keywords: *higher education libraries, guidelines, information literacy, learning, Portugal*

Written Reflections for Student Workers: High-Impact Practices at Work

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Objectives

Our goal is to share how we have incorporated written reflection into the jobs of the students who work in our library space. By listening to us reveal our program of writing composition for our student workers--as well as how we have used that writing to improve communication and service--we hope the audience will see that information literacy is not only about the information that students find and analyze; it is also concerned with the information that they create.

Methodology

We were inspired to graft written reflection into the work of our student employees after reading Kuh's *High-Impact Educational Practices*. In that text, he mentions that High-Impact Practices (HIPs) "have been widely tested and have been shown to be beneficial for college students from many backgrounds" (Kuh, 2008, p. 9). He also gives examples of HIPs, which can take the form of learning communities, global learning, writing-intensive courses, collaborative projects, and diversity learning (Kuh, 2008, p. 6).

What is important to note, however, is that Kuh writes about High-Impact Practices only in the context of the classroom. Never does he write about the effects HIPs might have on student employees, so in the last year, we have developed a program designed to test this gap. Our program is focused on written reflection because that mode of writing is not only intensive--it is also related to other HIPs, like learning communities, diversity learning, and collaborative projects.

In practice, we first share a Google Doc with a student. Next, for a half an hour, we cover this student's responsibilities at a service desk while they find a quiet place to write and reflect about their library work. After the student is finished, we comment on that Google Doc, asking questions and giving encouragement. Finally, if the student has composed something that we think other students could benefit from--perhaps the student wrote about a conflict with a patron--then we ask the author for permission to share their reflection in group meetings, where once a month employees in our library space convene to discuss library operations.

These written reflections have proven themselves useful for a number of reasons. First, we believe they have improved communication between supervisors and workers. Second, they have begun to serve as a record--a history--of our library space. Third, they often take the form of stories, which we then use as case studies to learn from in our group meetings. Further, they are certainly related to information literacy because they have given us an appreciation for how alternative forms of information can be created in an organization, as well as how those alternatives can be interpreted by members of a group.

Outcomes

After our presentation, our audience should have an awareness of High-Impact Practices and an understanding, in particular, of the value of written reflection in the work of student employees.

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Keywords: *high-impact practices, written reflection, student employment, storytelling, learning communities, collaborative projects*

Information Literacy for Scientific Organizations: Progress by International Co-operation

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This presents an overview of activities during recent years by the author and numerous colleagues to stimulate progress in information literacy in scientific organizations, including universities, mainly by stimulating international co-operation.

Objectives

For a few years, the author has been involved in a series of activities that aim

- to stimulate interest and progress in information literacy in scientific organizations, including universities;
- to bring together experts from widely different countries at various levels of development;
- to confront these experts with each other's views, problems, challenges, hopes and expectations;
- to exchange experience and didactic approaches among various organizations at an international scale.

Methodology & Outcomes

- International Training Programs of a few months have been organized in relatively well-developed universities in Belgium for young information professionals from developing countries in Africa, Asia and Latin America (see for instance Nieuwenhuysen, 2010). 18 programs have been running until 2014.
- As a follow-up, two workshops of a few weeks in length were organized at the end of 2014, on closely related topics: one on discovery of scientific information and one on information literacy didactics. The participants were experts from relatively developed countries, as well as selected, enthusiastic, successful former participants to the training programs, who have evolved to become local experts.
- One result of that workshop on information literacy is a series of identified challenges and corresponding recommendations. To reach a wider audience, these have been presented at conferences in the Philippines, India, Lithuania, Cuba, and have been published recently (see for instance Nieuwenhuysen, 2016).
- Furthermore, the workshops mentioned above have inspired and stimulated former participants in developing countries to organize similar workshops, with contributions by the organizers of those earlier activities: one workshop was held in Pune, India in 2015, one is planned in the Philippines in 2017, and one in Cuba has entered the planning phase in 2016.

Clearly, we deal not with simply one project and its outcomes, but with a series of organically growing activities. This is a successful consequence of the approach known as "teaching the teachers". Also, the phrase 'snowball effect' is applicable here is a positive way. Relatively small investments have yielded visible, constructive outcomes and have created an enthusiastic group of experts that organize further activities in the area of information literacy didactics.

Acknowledgement

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Keywords: *information literacy, international co-operation, science, developing countries, capacity building*

Public Libraries at the Digital-Information Literacy Crossroads

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Public libraries have always offered information services and some have offered specialised services such as business information, local studies, and recorded and print music. Information and communication technologies (ICT) has changed these services exponentially, both in terms of the content and method of delivery. Access can now be provided to information from all over the world at great speed and via sophisticated delivery channels. Libraries, therefore, need to be aware of a wide range of sources of information from free to expensive commercial publications and of the technology available to communicate with users Europe's public libraries currently stand at a crossroads of opportunity brought about by a confluence of social challenges and the potential offered by developments in ICT that have increasingly becoming available to implement new services.

Public libraries have a unique culture: they are accessible, civil, and enjoyable places. They provide a unique mix of resources and services and already embody the values necessary to contribute to a socially inclusive society. They are a secure, risk-free and supportive social place that welcomes all on equal terms. They serve as a gateway to knowledge and diversity, enabling forces for learning and a catalyst for change. Digital exclusion and poor information literacy skills increasingly are real barriers in people's lives. The challenge concerns not only ICT job training but also very basic knowledge. Risks of digital exclusion cumulative and result in other disparities whilst digital opportunities can improve the quality of life for traditionally disadvantaged groups. People at risk of social exclusion and 'technologically shy' late-adopters need to learn how to use the Internet.

Information literacy is vital in order to take advantage of e-Learning and new job opportunities. Internet usage is increasing across all socio-economic categories, but the access gap – between men and women, employed and unemployed, high and low-incomes, highly educated and less educated, old and young – is growing. Those who do not have Internet access are missing opportunities.

Public libraries are extremely well placed to address the challenges of the digital divide by improving the delivery of services, tackling educational disadvantage, and helping deal with demographic changes. Lifelong learning is becoming the guiding principle for provision and participation all across the continuum of learning contexts. Lifelong learning is defined as the whole cycle of learning from childhood learning, formal education at all levels through to independent learning throughout adult life, including distance learning, whether or not credits, certificates or diplomas are involved.

Keywords: *public libraries, lifelong learning, information literacy*

POSTERS

The Role of Green Libraries in Environmental Sustainability: a Study on Approaches of Academic Library Directors

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Green library action has boosted both libraries and their users to contribute to ecological sustainability. The concept of the green library, which emerged in the late 20th century, has recently started to be used commonly in the field of information science (Küçükcan & Konya, 2013), is defined as a "library designed to minimize negative impacts on natural environment and maximize indoor environment quality by means of careful site selection, use of natural construction materials and biodegradable products, conservation of resources such as water, energy etc." (Online Dictionary of Library and Information Science [ODLIS], 2017). Today, libraries are considered significant partners in sustainability because they not only disseminate the idea of sustainability and teach environmental literacy but they also become roles model for other organizations in green practices by thinking globally and acting locally (Mulford & Himmel, 2010). Thus, it can be stated that, as decision makers, library directors play a key role in the sustainability and practices of green libraries while making decisions in crucial issues such as supporting sustainability, being more sensitive to nature, and creating green library perceptions.

This study aims to address: (1) the approaches and attitudes of library directors towards the possible impacts of libraries on the environment and, (2) measures taken and contributions of green libraries to environmental sustainability. Within the scope of the study, a questionnaire was conducted with 13 library directors in Ankara, Turkey. The survey consists of six main sections addressing: sustainable environment, water saving, energy and atmosphere, sustainable resources and materials, indoor air quality, and innovations in design and application. The results revealed the green practices of the libraries along with the environmental awareness and environmental literacy level of the library directors.

Findings of the survey have proven that university libraries in Ankara only partially meet green library criteria. Findings also indicate insufficiencies and ignorance in terms of water saving, routine follow-up of water consumption, energy use and use of renewable sources as well as participation in environmental activities. Some differences among universities in terms of environmental approaches and green practices were also detected. Atılım University, Bilkent University, Başkent University, University of Turkish Aeronautical Association and Middle East Technical University libraries were found to be the greenest, in other words, most environmentally friendly libraries. A majority of the library directors have been identified to be sensitive to environmental sustainability, water and energy saving as well as taking necessary precautions.

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Keywords: *green library, environmental awareness, environmental attitudes, environmental sustainability, environmental literacy, university libraries, library managers*

European Information Science Education Project: Harmonizing Information Literacy Skills at the European Level

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Purpose

The purpose of this poster is to present the ongoing Erasmus+ project on harmonization of mobility and learning outcomes in the area of information sciences (IS) at the graduate level. One part of the project will deal with harmonization in the form of two summer schools (one in 2017 and one in 2018) that will be offered to non-IS students who desire to enroll into an IS program at the master's level. One of important outcomes of the summers schools will be, besides providing factual knowledge on chosen IS topics, to provide training on information literacy (IL) and harmonize prior student IL competencies and skills. Despite being digital natives, many higher education students lack the information and communication (ICT) literacy skills necessary to navigate and use the overabundance of information available today. These summer schools will teach and/or refresh and harmonize the IL skills of students necessary for their successful enrollment into the IS MA program at a chosen partner institution. The partners on this project are University of Osijek (Croatia), University of Graz (Austria), University of Pisa (Italy), University of Barcelona (Spain), Hacettepe University (Turkey), University of Ljubljana (Slovenia), and Hildesheim University (Germany).

Design and Approach

Over the course of the two-year project, partners will prepare two summer schools on ISand a final international scientific conference in Pisa (2018) where they will present the findings/results of the project. Summer schools will consist of four course modules.IS, information retrieval, methodology, and evaluation that will be taught online (prior and post summer school) and face-to-face over one week. The participants of the summers schools will be required to demonstrate an acceptable level of various kinds of IL skills in order to be able to participate in pre-summer school assignments. Those IL skills will be further trained during the summer school and, finally, demonstrated again during the post-summer school assignments.

Originality and Value

One of the main outputs of the project will be the document entitled *Policy Recommendations for the Entry Requirements and Learning Outcomes Harmonization*. This document will be adopted at the International symposium in Pisa in September 2018 and will also incorporate recommendations on the IL skill level necessary for the MA entry students. The project will also lead to a stronger networking between European IS departments, higher education institutions, s and ICT companies as well as decision-making bodies.

Keywords*:* *Europe, graduate level, information literacy, information sciences curriculum, learning outcomes*

Study of Information Search Behavior by Users of the Legal Area in the Library of the Tribunal Eleitoral De Rondônia, Brazil

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This study aimed to analyze the information search behavior by users of the legal area in the library of the Tribunal Regional Eleitoral de Rondônia, Brazil - TRE-RO. The specific objectives of the study were to identify the users' profiles, their search habits, use of information, and the sources the useres considered fundamental. The literature review, based on authors such as Kuhlthau & Tama (2001), Passos & Barros (2009), Wilkinson (2001) and Wilson (1999, 2000), presents conceptualizations about the law, legal information and their types, user studies, and characterization of the librarian and the user, and definitions regarding information behavior. The research followed an exploratory methodology and used a qualitative and quantitative approach. Data were obtained through a questionnaire containing open, semi-open, and closed questions. It was found that while, for the most part, users of the library TRE-RO have degrees in law and present their information search behavior as independent, a third of users have reported difficulties in developing strategies for conducting Internet searches. It found that users only have recourse to the librarian when the level of difficulty of the search is considered high. It also showed high use of informal communication as a resource to answer questions about the search, use of legal information, and/ot information updated. The sources of information used by respondents were the search tools on the Internet, the electoral Brazilian code, the jurisprudence of the Higher Electoral Court of Brazil and courts of other regions, and books. As a result of this research the TRE-RO library engaged in better planning of its services and information products and, thus, better services in meeting the informational needs of legal area users. It is hoped that this study will bring significant contributions to the field of librarianship and to promote further discussion on this topic.

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Keywords: *seeking behavior, user juridical, legal information*

The Role of National Medical Library in the Support of Health Information Literacy in Lifelong Learning of Librarians in the Czech Republic

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Health literacy is a key determinant of health. Health 2020 is the new European health policy framework. Its aim is to support improvement of the health and well-being of populations, reduction of health inequalities, strengthening of public health and ensuring people-centred health systems that are universal, equitable, sustainable, and of high quality. National Medical Library (NML), public, specialized library, cooperates on this national strategy Health 2020 with the Ministry of Health of the Czech Republic.

The aim of our poster is describing the main settings of the process of retrieving, organizing and presenting reliable health information for lay people. NML is currently preparing a special offer of information service on their website called MedLike. It is a selected set of reliable sources for lay people made accessible through NML to support the increase of health information literacy. MedLike methodology defines the procedures to search, collect, evaluate, organize and present reliable information sources. We are going to use selected methods: survey of citizen´s information behaviour (about four hunderd respondends), critical approach helps to evaluate the quality of information,we selected of eight quality score indicators: autorship, publisher, up- to date (actuality), security of personal data, complementarity, funding sources, user friendlines, verifiability, and for searching we decided use methods of web searching - integrated search via Google.

Building librarians' health literacy skills and abilities is a lifelong process. NML has specialists who sort out reliable sources about health and disease and insert them into the information file called MedLike, which may be developed into a portal. Librarians of NML are able to train other librarians and show them how to look up requested and verified health information efficiently and how to impart this skill to the users.

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Keywords: *health information literacy, health literacy, public libraries, lifelong learning*

How NTNU University Library Promotes Academic Writing Skills: Redesigning the Online Information Literacy Tool VIKO

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InsSpring 2017, the University Library of the Norwegian University of Science and Technology (NTNU) launched VIKO, the redesigned tool for fostering information literacy and academic writing skills.

VIKO (Veien til InformasjonsKOmpetanse), in English 'Your guide to information literacy', has been widely used by NTNU students and teachers for 12 years.

The digital and technological development as well as new requirements for information literacy skills and academic writing skills have made it necessary to revise this tool.

A working group at NTNU University Library developed and carried out an electronic survey to find out the specific needs of students, teachers, and researchers. We involved our users in developing our information literacy tool to give them a more useful user experience. We asked questions: Is information about academic writing something you need? And in case your response is yes, where do you go to find information about this? What kind of content do you desire? What should the technical platform and design be? The answers received told that "Yes!" this was something both students and teachers wanted. They was eager to get all the information they needed in their studies in one place.

Results of this survey and additional depth interviews with students and staff have been the initial point for both the updated content and the new graphical design of VIKO. To accommodate the wish for giving them all information in one place, all content is now placed on the University Intranet together with all other information relevant for the students. A theme page helps students navigate in the content about academic writing. And, instead of "VIKO", the site includes the name, "Academic Writing", to gives the students a better understanding of the content.

The content of the redesigned tool is structured in four topics: defining a research topic, finding sources, structuring your text, and using and citing sources. Each of these topics has several subtopics.

When updating the content and redesigning the web interface the focus has been on using not only text but also pictures and videos. We know that people have different ways of learning, so offering content for different learning styles like visual learning, auditory learning, and read/write learning will contribute to improving the learning outcomes.

The poster will present NTNU's redesigned online information literacy tool, VIKO – Help with Academic Writing, and will describe both improvements and challenges for the new product. It will also show how to link videos as learning objects to the university's learning management system, Blackboard.

Keywords: *academic writing skills, information literacy, NTNU University Library*

Preparation for Teaching in the Academic Library: First Career vs. Second Career Librarians

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With the growing emphasis on information literacy and critical thinking in higher education, it is increasingly important that academic librarians who provide instruction have the necessary skills related to their teaching responsibilities. Many librarians who teach have received little or no formal pedagogical training in graduate school and have acquired these skills through other means (Albrecht & Baron, 2002; Shonrock & Muldaur, 1993; Westbrook & Fabian, 2010.) This poster will present the results of a study that examined how academic librarians who provide library instruction acquire their teaching skills, looking especially at first career librarians vs. second career librarians. A first career librarian typically enters librarianship immediately after graduate school, while a second career librarian would have had a prior career in another field before becoming a librarian.

The purpose of the study was 1) to determine the degree to which previous work experience (specifically a first career) may have had an impact on a librarian's ability to perform his/her teaching responsibilities and 2) to examine the extent to which the master's degree in library science (MLS) has prepared librarians in the area of teaching. This study employed the *ACRL Standards for Proficiencies for Instruction Librarians and Coordinators* which include twelve skill categories that can serve as a measure of a librarian's ability as an instructor. A survey was sent to four library Listservs yielding 608 respondents. Results indicated that librarians who had another career prior to becoming an academic librarian who provides instruction felt that they were better prepared to teach than those who did not have a prior career. Furthermore, these librarians' responses seemed to suggest that they felt that their prior work experience provided them with a greater extent of preparation for teaching than did their MLS education.

Attendees will 1) gain an understanding of the importance of including pedagogy in the LIS curriculum and 2) recognize how prior work experience can provide an advantage in the teaching arena.

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Keywords: *teaching skills, teaching preparation, LIS programs, academic librarians*

Outcome Assessment of Children's Digital Literacy Instructions of Guangzhou Library, China

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Objectives

As the biggest public library in Guangzhou, Guangzhou Library has developed a series of instruction programs to support digital literacy for children to ensure their digital inclusion and empowerment. However, organizers of these programs have no idea about the children's satisfaction with the programs, or their learning progression. The purpose of this paper is to propose a digital literacy assessment instrument and apply it to evaluate the outcomes of these programs, and then find out which elements would affect the impact and value of children's digital literacy education in public libraries.

Methodology

The study was divided into two phases: phase I, developing an outcome assessment instrument. It was composed by three criteria: user satisfaction of the instruction, (Kirkpatrick, 1996), user learning outcomes, (ALA, 2013), which means whether users' digital skills improve after the program; and loyalty of users, that is， whether users want to participate in the follow-up activities or not. Phase II, applying the assessment instrument to evaluate the outcome of a program, "digital reading skills training program" (a parent-child activity and children should be at least over six to participate in this activity). Likert-type scale questions were used to address users' satisfaction, learning outcomes and loyalty about the program. Two separate surveys with matching questions were developed and administered, one to children (as children over six have basic literacy to complete our questionnaires) who attended the program, and the other to parents who accompanied with them (who also participated in the program). Sixty-one children and 40 parents participated in this survey. SPSS 22.0 was applied to process the data.

Results

The empirical results showed that user satisfaction and loyalty both got high scores (4.21 and 4.18 out of 5 respectively). While user learning outcomes scored 3.92. However, children perceived that their abilities of understanding digital information and creating digital content improved greatly (these two indicators of user learning outcome got 4.01 and 4.00 respectively). It indicated that most participants liked the instruction program and would attend the successor activities, and they thought that their ability of comprehending digital information and creating digital content had improved after the program. It determined that the instruction program had some positive outcomes. Furthermore, according to correlation analysis, we found that the purpose of using electronic devices might affect children's perception of learning benefit; besides, whether children need help or not when using electronic devices had a significant correlation with user learning outcomes. This meant children who show poor digital competence would get greater promotion in digital skills after participating in the program.

In all, this study testified that the outcome assessment instrument we developed was applicable to measure the effects of "digital reading skills training program". And we hope that this assessment instrument can help public libraries to deliver digital literacy training and services for children in their communities successfully.

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Keywords: *digital literacy, information literacy, outcome assessment, public library*

Narrative Identity as Creative Art: Exploring Homelessness and Citizenship through an Academic Community Engagement Course

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Critical information literacy frequently involves the development of what James Elborg (2006) calls a "critical consciousness" – acquiring an ability to question an agency's role in framing a coherent and reasoned view of reality. Including a broader view of knowledge acquisition while engaging learners in community engagement endeavours promotes evaluating and understanding disciplinary systems of information. This collaborative action itself, when conducted within a community of peer learners, allows for a shared interpretation of the experience where learners forge their own identities and understanding. Critical information literacy, then, establishes a need for a wider metaliteracy framework – one that advocates for collaboration and community engagement, framing critical awareness of information arrangement, access, and evaluation in a societal context. Through a collaborative, academic service learning-based course, these approaches to critical information literacy present a model for teaching undergraduates that is both forward thinking and reflective in its efforts to build partnerships between students and community members to achieve collaboratively defined, socially responsible goals. This presentation will explore the relationship of collaborative, team-based, service learning approaches to critical information literacy within an undergraduate intensive writing course. The course, The Rhetoric of Home and Citizenship, invites students to analyze the language and images used by the media and by ordinary people to discuss home and homelessness. A course that usually entails student learning about rhetorical situations, writing in various forms and competency in source use, soon became a forum for deeper student thinking about the ethical and practical implications of print and digital collections and archives and their use. Through an engaged community research project model, librarians partnered with the lead course instructor to develop and teach a curriculum that enjoined the students with the Indiana University Libraries, Bloomington's Crawford Homes, the Shalom Community Center, and the Interfaith Winter Shelter. Through interviews and meaningful community service at the local agencies, students developed creative non-fiction life narratives of the shelter residents who have experienced long-term homelessness. Students also developed a permanent archive and curated a university library exhibition of their work, inviting community members to share the students' (and residents') journeys as they engaged with the community and reflected on the significance of providing (and preserving) voice to a disadvantaged and oft-overlooked population. The exhibit displays life narratives of Bloomington residents who have experienced long-term homelessness and allows visitors to share the students' journeys as they explored the university archives, co-curated their own archive with the community, and reflected on the significance of the lives and the art we preserve in library collections.

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Keywords: *critical information literacy, social change, community engagement, identity, democracy*

Information Literacy Online: An Erasmus+ Project to Improve Students' Competencies

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Motivation and Background

Information Literacy (IL) is "the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning" (American Library Association [ALA], 2016). IL as a social key competence is particularly essential in post-secondary education and research. According to many studies (e.g. Rubinić, Stričević, & Juric, 2013; Maurer, Schlögl, & Dreisiebner, 2016), student's information literacy levels are generally low. Accordingly, in November 2016 the EU project ILO was started with the aim to produce a multilingual Massive Open Online Course (MOOC) for developing IL focusing on higher education students.

Expected Outcome

MOOCs are online courses with no entry barriers, aiming at unlimited participation. The ILO project will at first concentrate on generic IL elements which are relevant for all subjects/disciplines. IL also covers subject-specific elements, so the project will demonstrate the applicability of the generic information literacy MOOC to two exemplary disciplines: Business Administration and Psychology.

A major shortcoming of current IL courses is the lack of self-assessment components. Therefore, a central innovative approach of our MOOC will be the implementation of technology based assessment components which allow students to get feedback on their learning success. The MOOC content will be developed for six European cultural and language groups: English, German, Spanish, Catalan, Slovenian and Croatian. The multilingual approach will not only consider formal translation but also cultural-specific differences. The project will strongly endeavor to evaluate the MOOC in several phases and with different methods.

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Keywords: *information literacy, MOOC, education projects*

Information Literacy Competences: Finding, Using, and Managing Information by Nurses in a Specific Health District

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Introduction

The changes that have taken place in the information society as it moved from analogical towards digital data have led us to look at the reading and writing practices in the professional nursing sector in the health district of La Axarquía (Málaga, Spain) as well as at their digital competences. This work aims to identify the information tools used by the nurses and attempts to diagnose the current state of their information skills in this health district (Fernández-Luque & García-Navas, 2016).

Aim

This work's aim was to determine the situation and to address training in information skills in the context of health sciences in the workplace as well as in the context of the acquisition of digital skills as recommended by the European Council (Vuorikari et al. 2016).

Method

Questionnaires hosted in Google questionnaires were distributed among the clinical nurses' staff of the East of Malaga-Axarquía District of Sanitary Management for a period of 6 months. An Excel spreadsheet was used for the analysis of the data. (Fernández-Luque et al. 2016).

Results & Conclusions

Eighteen and a half percent of the nurses did not use electronic journals because they either did not know how to use them or were unaware of where to find them, stating that they are difficult to use. Twenty one percent dod not know the uses of digital magazines (RSS, Fins, etc).

Most nurses first used internet search engines followed by library discovery tools. Nurses in the area were unaware of the access tools for storing and handling scientific-digital information, while more than 50 percent did not know about reading applications and bibliographic managers, 95 percent ignored 2.0 tools and did not know how to handle digital identity or professional and/or scientific social networks.

Nurses recognize that their knowledge of digital information management is insufficient and they attach great importance to training in acquiring of information literacy competences.

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Keywords: *information literacy, media literacy, digital competencies, healthcare literacy, health information literacy, digital writing, digital reading*

The Digital University Library as Knowledge Producing Resource and Educational Participant in Nordic Higher Education

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In this poster, we want to present the first year of the collaborative project between three Nordic university libraries in Aarhus, Denmark; Lund, Sweden; and Bergen, Norway.

The aim of this Nordplus project is to strengthen the libraries in four areas:

- In meeting the institution's virtual learning environment
- In collaboration with faculty and students as co-creators
- In developing subject specific open educational resources (OERs) that support students' academic skills (including information literacy) and digital practice
- In knowledge sharing between Nordic university libraries

By the time of the conference in September 2017, the project would have analysed the activities in these four areas. The planned activities are:

- Workshop1 in Aarhus. Kick-off. Thematic lessons for inspiration and work on co-creation from students in collaboration with library and faculty – Completed.
- Workshop2 in Lund. Thematic lessons of blended learning in practice and developing tools for OERs – Completed.
- Workshop3 in Bergen. Thematic on information literacy and academic writing services in virtual environment – in May 2017.
- Workshop4 in Aarhus. The participants present their subject specific OERs and feedback from the users – in August 2017.

Between the workshops, the participants are working across the Nordic libraries in subject groups and are exchanging ideas and knowledge. They are also working within their own institution in collaboration with faculty and students in planning and developing OERs.

Keywords: *information literacy, academic skills, OER, blended learning, co-creation, faculty, students, library*

The Impact of Health Literacy Education on Womens' Perceptions and Understanding of Maternal Health in a Kochi Urban Slum – the First Project Funded by a New NGO

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Objectives of Kerala Pilot project, Methodology & Outcomes

HWDI's first project addresses maternal health problems of women living in two urban slums in Kochi, southern India. 32% (2012 data) of the city's population lives in more than 200 slum colonies, with monthly incomes between 500-3000 Rps ($45-300 US). Babies are born in hospitals, either private or Government-run but due to poverty, ignorance and discrimination they receive poor treatment with an overemphasis on Caesarian sections. There is a high incidence of alcohol and drug use, as well as domestic abuse. There is no sex education offered by the local schools and in general, the diet is poor. Birth for Change (BfC) is our local partner. The staff of Birth Village and four volunteers, including two doctors, will provide education focused interventions in a local building which will become a classroom and health clinic for the duration of the project.

- *Phase 1* - BfC staff will conduct a door-to-door baseline survey, obtaining data on the number and age of the children in the family; general knowledge of menstruation, contraception, pregnancy and birth practices; the family diet and use of drugs, alcohol and cigarettes. In addition, six specific impact questions (relating to the educational sessions of Pages II) will be asked and answers categorised between fully aware, aware, inaccurately aware and unaware.
- *Phase II* - There will be six monthly health literacy education sessions on menstruation, diet, alcohol and smoking, pregnancy, childcare and healthy birth practices. These will involve group activities, films, posters, quizzes. The impact question will be answered again as each participant leaves the session.
- *Phase III* - A second door-to-door questionnaire will be administered several months after the educational sessions in an attempt to test for longer term retention, and behavioural changes, and will make use of a control group. The effectiveness of the inducements offered, such as fertility cycle beads, rice, and a trip to the beach, will also be assessed. It is anticipated that there will be a minimum of 10% participation allowing for a representative sampling of the population in around 400 households.

The project started in February 2017 with a well-attended inaugural event in late March. It is anticipated that the entire project will have a one-year duration. We will present the first five months' results, addressing improving knowledge of menstruation and the effects of diet and alcohol on mother and baby health, and its retention.

What is Hardie Wren Development Initiatives?

Hardie Wren Development Initiatives (HWDI) is a new NGO, created in 2016, with a focus on improving science literacy in disadvantaged communities. HWDI believes that a scientifically literate community has the best chance of understanding, shaping and improving its everyday life. It is calling for a "literacy rethink", using innovative ways to increase the limited information landscapes of many communities. Whilst formal education tools are an important part of this challenge, especially for children, HWDI is convinced that all aspects of society, from industry and its products to those providing its services, as well as public policy, must work together to bring about a transformative change in access to high quality and relevant information. Banishing ignorance, especially when lack of knowledge hampers daily life and employment opportunities, is surely the hallmark of an inclusive, safe society.

Keywords*: science literacy, maternal health, community-based education, effectiveness of inducements*

The Present Situation and Consideration of Children's Information Retrieval Education in Public Libraries, China

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Objectives

Information literacy is an ability that can help children become innovative, and one of the necessary qualities to compete in social competition. Nowadays, for the sake of improving our information technology education, China has paid more attention to fostering the information literacy of children. Furthermore, China has widely promoted the education of information technology for children and adolescents so that they can master basic information skills. Public libraries are an essential part of culture and education. There are three purposes of this study about public libraries in China. First, how do they promote information retrieval skills? Second, how do they cultivate children's interest in information retrieval? In addition, how do they educate those students so that they can eventually grow into an information literate person?

Methodology

The study used literature analysis, according to the collection of literatures on information retrieval education of children in China's major public libraries in the past decade, to find problems of information retrieval education for children in China, and put forward reasonable suggestions.

Outcomes

China's public libraries focus on the borrowing process, and rarely organize activities that allow young people to learn information retrieval and information access. Therefore, we can reach a conclusion that public libraries in China have relatively less functions and open innovation. Public libraries in China are actively innovative in forms of reading, conducting propaganda in community, and encouraging children to actively participate in the activities of dealing with information. In the network environment, libraries can build miniature information literacy education platforms to improve the enthusiasm of participants (Lu,2014).

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Keywords: *information retrieval education, public library, information literacy education for children*

Feedback as a Vital Tool for Custom-Tailored Information Literacy Courses for Doctoral Students and Beyond

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The Central Library of the Czech Technical University in Prague (CTU) started information literacy courses, "Information for R&D", for doctoral students in 2010. The content has been arranged according to the needs of the students who are at the beginning of their research and work on their doctoral theses. There are ten topics within the course that were modified over the years. The changes were always based on the students' knowledge and experience, on the information sources available at the university, and finally on the results from the students'course evaluations and discussions.

A study of the impact of the classes was based on results received from the analysis of the students' course results including their assignments, tests, and home work; from the university's strategic goals; changes in the fields of study; changes in teaching methods; new technologies; as well as supplemented with the students' course evaluation. Every course is evaluated by the students to get feedback for optimizing the content, teaching methods, and study materials. In addition to the evaluation results we also took advantage of access to discussion with the students and e-mail correspondence between the course participants and the lectors. Feedback became a vital instrument not just for the course optimizing, but also for enhancing the library activities.

The poster intends to illustrate changes in the courses' surroundings followed with practical implications in different forms: new topics, changes in assignments, arranging individual seminars for faculties, lectures provided by invited experts, new library services, and new ways of communication with the students.

Keywords: *information literacy courses, course evaluation, course optimizing*

The Vision of the Reference Librarians in University Libraries in Brazil on the Informational Competence of Users of Digital Reference Services

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Introduction

A set of skills is required for individuals to have informational literacy. ACRL determines that, tobe information literate, it is necessary to be able to access needed information effectively and efficiently, to know how to select research methods and information retrieval systems, build and implement appropriate search strategies, retrieve information online or in person, refine the search strategy, extract and organize the content. The purpose of this study is to assess the perception of reference librarians who work in Brazilian university libraries of the competence of the users of their digital services.

Methodology

A qualitative methodology was used in this exploratory study, A questionnaire was structured with closed question responses on a Likert scale. Questions were designed to reveal the main abilities of users in identifying a variety of types, sources, and formats of digital information; the use of search methods to build and implement search strategies in a planned way; the refine search strategy; the ability to extract, record, generate and summarize key information ideas; to ability to articulate and apply initial criteria for the evaluation of information and sources; and follow-up questions on institutional laws, regulations and policies. For this, librarians were asked to indicate their degree of agreement, according to these skills based on the ACRL (2000), Jr Weare (2013) and RUSA (2010) guidelines.

Results and Contributions

The result revealed a majority in the reference librarians disagreed with the abilities of their users to demonstrate information literacy. However, we argued that librarians do not agree that users are adept at identifying a variety of types and formats of digital information sources; using research methods, constructing, and implementing search strategies in a planned way; refining the search strategy when necessary; extracting, recording, managing, and summarizing the main ideas to be extracted from the information; articulating and applyiing initial criteria to evaluate both information and its sources and its importance to meet its informational needs; and understanding and following laws, regulations, and institutional policies related to the access and use of digital information resources. Non-compliance with user-related assertions revealed a perception of librarians “extreme disbelief” of users’ skills during the reference process. The result demonstrates the need for more user training and greater clarification of their needs.

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Keywords: *reference service, University libraries of Brazil, information literacy*

New in Media Education: Wikididactics

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Objective

Wikipedia is a global, free and multilingual Internet encyclopedia, the oldest and largest project of the Wikimedia Foundation. The rapid process of its development continues around the world, leading to the emergence of new concepts and terms. Today we can talk about a new specialty: Wikimediamaker – Creator of software; Wikipedianist – the author of the articles; Wikipedagogue - a teacher who uses Wikipedia in educational work; and, Wikididact – the one who teaches to write and edit articles in Wikipedia, as well as creates training manuals and so on. Therefore, there are new units still in a very new educational branch that are mediapedagogics and mediadidactics. We are tracking these processes on the page "WIKIDIDACTICS" [https://www.facebook.com/groups/179642667 0616724/]. It includes the authors of Wikipedia and those who teach writing and editing articles in Ukrainian encyclopedias and promote the exchange of experience in educational work by means of Wikipedia.

Methodology

In May 2009, the public organization "Wikimedia Ukraine" was created. "Wikimedia Ukraine" promotes the creation and dissemination of free knowledge, particularly in Wikimedia projects. We have wikitrainings to explain to everyone how to edit Wikipedia and participate in other Wikimedia projects; competitions for writing articles; and photo contests. We write articles to wikiprojects. Librarians and other people are involved. Since its adoption, "Wikimedia Ukraine" has added 677,000 articles and its pages are viewed by 50 million users per month.

The Wikipedia education program is an international program for the dissemination of the practice of writing articles in Wikipedia as a form of independent work for students or pupils at schools. On the 14th of February 2017, the Ukrainian Wikipedia had 680,794 articles on various subjects and occupied the sixteenth position among all the language sections and the third among sections in Slavic languages. Wikipedia gives the opportunity to diversify the learning process and bring students' work to the public. Separate experiments with the curriculum and Wikipedia in Ukraine have already been done [https://www.facebook.com/groups/ 1565189783740050/?fref=ts]. Students' research work immediately documented the world's heritage through the Wikipedia article.

The goal of Wikipedia is access to knowledge. A teacher from Cherkasy Kodola Valentyna has created a few videos with recommendations on how to connect independently to the process of creating articles for Wikipedia. Under her leadership, the children look for information related to the topics of the discipline, write articles, discuss them, and upload them to the network. Similar work is conducted by teachers in many regions of the Ukraine [https://www.facebook.com/groups/495748843947287/?fref=ts] who now work on the creation of the textbook "Wikipedia at schools".

In January 2017 three days were devoted to a Wikimarathon to mark the thirteenth anniversary of Ukrainian Wikipedia, nineth anniversary of the Crimean Tatar, and the sixteenth anniversary of Wikipedia in English. During those three days 2031 articles were created.

Conclusion

The possibility of using Wikipedia is infinite, so we can predict the success of wikididactics as a new pedagogical branch.

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Keywords: *Wikipedia, medipedagogics, media education, mediadidactics, Wikididactics*

Supporting Research Data Management: Challenges and Approach from an Academic Health Library Perspective

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Introduction

In 2015, Ghent University Library (Belgium) conducted a university-wide survey that gave the Knowledge Center Ghent (Health Faculty Library) better insight into the information literacy self-efficacy of health researchers. One of the topics surveyed was research data management (RDM). Proper RDM is vital to achieving this aim, and is also viewed more broadly as an essential part of good research practice by a growing number of scientific stakeholders. The survey results indicated a significant knowledge and skills gap regarding the handling of research data (De Meulemeester A et al., 2017). While addressing such shortcomings, in this poster we discuss the challenges and how the knowledge center has started tackling the issue by providing health researchers with information and guidance on relevant RDM topics.

Methods

Experiences of institutional RDM service development in combination with those of RDM initiatives at the faculty level were used to describe the challenges and current approach to RDM support of an academic health library.

Discussion and Conclusion

Extending the academic library's role into the new domain of research data is no mean feat, as, for example, it requires new expertise, new partnerships, financial means, a consideration of existing institutional realities, and an approach that balances the generic with the more discipline-specific. The latter is fundamental to obtain broad researcher acceptance on one hand and to supply assistance tailored to a specific subset (e.g. health) researchers on the other. For example, health researchers may need major digital data storage capacity when using radiographic images for research.

At Ghent University, RDM services are being developed in a hybrid way, encompassing both university-wide and decentralised initiatives, as well as involvement of library and non-library staff alike. As a faculty library, the knowledge center has focused its efforts so far on providing online guidance on its user-oriented website and information sessions. The online guidance directs researchers to institutional-level information and support, while enriching this with discipline-specific content. The knowledge center organises lunchtime seminars where experts are invited to talk about key aspects of RDM, but focused on the needs of life science researchers. For example, topics such as data anonymization, privacy and storage of confidential personal data were discussed extensively. At the same time, the seminars provide an occasion for health researchers to discuss and share best practices, and for the library to learn more about their RDM needs.

Due to time and financial constraints, and given the institutional context in which it operates, the Knowledge Center Ghent has thus chosen to define its RDM support role as the provision of information and guidance tailored to health researchers. In absence of a data librarian, the knowledge centre gives advice but does not write the data management plan at the request of the researcher. Our case nevertheless demonstrates that even small initial steps can contribute to increasing RDM knowledge and to boosting researchers' RDM skills and attitude.

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Keywords: *academic library, barriers and challenges, health sciences, research data management, RDM*

The Information Literacy of Users in the Context of Database Training

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In the fifteenth century, the invention of the press by John Gutemberg caused a major revolution in knowledge dissemination. In the twentieth century, the advent of information and communication technologies (ICT) have further enhanced access and helped democratize information. With these new technological resources, such as the Internet, information has become instantaneous and simultaneous reaching individuals in different parts of the world.

As an important subject area, health science has a diverse array of publications in conventional and digital mediums that are distributed or compiled in on line databases. On the other hand, this causes an excess of information and creates difficulties for location, searching, and identifying trustworthy information. The librarian is a mediator between information and the user and have, amongst other responsibilities, the task of fostering user autonomy. This is done with the aid of lectures, courses, and training.

Problem

Users have difficulties retrieving information in different information formats such as books, articles, dissertations, and theses as well as virtual environments and databases. Other difficulties relate to managing controlled vocabulary and elaborating search strategies. Thus, professional orientation regarding these services are fundamental and contribute to research success. This work aims to evaluate health databases training in databases such as PubMed, Virtual Health Library, Lilacs, and Medline with users at Triângulo Mineiro Federal University. The analysis acknowledges if this kind of training contributes to the process of building user information literacy.

Methodology

This study applied a qualitative research approach that included a descriptive approach of the research subject and an exploratory search in the area's scientific literature. An observation technique and an electronic questionnaire were used for data collection. These enabled the researchers to better comprehend user feedback on these issues.

Outcomes

Results show that that training in health databases should be rethought as to its duration and starting point. It was also seen that users know the functionalities and the importance of databases and only perceive their importance once they graduate. It was verified that database training is relevant to the information retrieval process and information literacy development. However, it is necessary that training be given in the initial phases of the undergraduate courses so that the users can explore the full potential of the databases during their university course.

Keywords: *information literacy, databases, training, users, Triângulo Mineiro Federal University*

The Role of Publication Language in Evaluative Judgments: An Experiment and Eyetracking Study

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Prior research indicates that language of publication may influence the perceived quality of information (Johnston, 2014); specifically, non-English content is perceived as lower in quality than English content, even among non-native speakers of English dealing with their own native language. The presence of bias for or against information based solely on its publication language is of concern to authors, publishers, and information professionals. While it is well-established that English is the dominant language for scientific communication worldwide (Ammon, 2001; Hamel, 2007), inherent biases towards English-language publications among bilingual and non-native English speakers have the potential to further disadvantage scholars, and the beneficiaries of scholarship, who operate in the 'peripheries' of academia (Altbach, 2003) outside of the more Western-oriented scientific establishment. These risks are concerning; unfortunately, it is unclear from prior research whether language bias truly exists and, if so, how widespread or powerful are its effects.

This paper presents the findings of a small-scale experiment testing the influence of publication language of scholarly articles on participants' perceptions of the quality, accuracy, and reliability of the material. For the study, 30 participants who are bilingual in English and Arabic were recruited to read and evaluate the merit of a peer-reviewed academic article of general subject interest while wearing eyetracking equipment that recorded their gaze and focus. The participants were randomly presented with either an English version or an Arabic version of the article. Participants then evaluated the material using an originally developed and validated Likert-style instrument along with written qualitative assessments. After the evaluative activity, video recordings of the participants' reading performance were analyzed using structured observation to identify patterns and behaviors used when evaluating the material.

In this paper, we will share the experiment's results of the impact of publication language on qualitative assessment, as well as observations related to the process by which participants approached the evaluation of scholarly material. The findings carry implications for information literacy instruction related to the evaluation of source materials, and contribute to the larger body of literature focused on the role of language in information literacy development.

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Keywords: *information literacy, source evaluation, eyetracking, structured observation, experiment*

Why Information Literacy Competencies are Key skills for Future Portuguese Librarians

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Social changes regarding the forms of relationship between producer and consumer of information, between author and spectator, or between writer and reader, only to name a few examples, shook certain beliefs concerning the way the production, exchange and reception of information is currently carried, and covers multidirectional paths. In this sense, further reflection is necessary on librarians' competencies and, more specifically, on the emerging need for their training in information competencies (Campello, Abreu, 2005). In fact, a change is already visible in librarians' training in Portugal (Silva, 2010; Ochoa, 2012), namely in the curricular reconfiguration of the training offer which grants a master's and doctor's degree in the fields of information and documentation. This study wishes to understand the state of the art of higher education courses in Portugal to train these professionals, currently recognizing technological axis and information literacy as two sides of a new expression and reconfiguration of this training. The purpose of this paper is to observe this change, using a systematic literature review (Moselen, Wang, 2014; Derakhshan, Hassanzadeh, Nazari, 2015), urging a change in professionals' attitude regarding their occupation. The goal is thus to reflect about future librarians' training, focusing on training in information literacy, which will influence their professional practices (Varela, Barbosa, Farias, 2016).

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Keywords: *information literacy, librarians, higher education, librarians' training, information literacy competencies, Portugal*

Understanding Professional Competence of Librarians in Information Literacy

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Librarians' jobs are directly linked to information and information related issues. Librarians' professional competence embraces a number of competencies needed for solving the problems of library and collection management, service development, and interaction with users and other stakeholders. It also includes competencies of work-place information literacy that are needed to keep oneself up-to-date in professional development but also to assist users in complex information environment. A large body of research literature covers competence and its development. This study differentiated the concepts of competence and competenc(y/ies), and presented a socio-cultural perspective of competence development. It was extended to the professional competence of library and information science professionals to position information literacy competencies of librarians within a wider range of their professional competencies. Literature through the Web of Science, Emerald Library, ScienceDirect, and LISA have been used in understanding competence, competency, and professional competence. The presented research contributes to the clarification and understanding of librarians' work-place information literacy in relation to their professional competence. The examples from empirical research of Pakistani university librarians are used to exemplify this relation. Practical implications of the study are for the 'state of the art' performance in all organizations. As a whole, this study is an attempt to enrich library and information science professionals to deliver information literacy services to information users.

Keywords: *competence and competencies, competence and information literacy, professional competence in library and information science*

Co-Design: Integrating Information Literacy into Your Disciplinary Course

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Understanding information and research is a crucial learning outcome in today's dynamic and often uncertain information ecosystem. However, what does information and research mean in today's society - for students and for faculty? Why should we stop and reflect on both 'information' and 'research'?

With those questions in mind, the AMICAL Information Literacy Committee[10] and the AUP Library organized a two-day workshop in March/April in Paris/France, entitled **Co-design: Integrating information literacy into your disciplinary course**.

Its objective was to think about these issues with the *ACRL Framework for Information Literacy in Higher Education* in mind and to develop a faculty-librarian collaboration in order to co-design embedded library instruction activities for one course. Therefore, only faculty-librarian teams who had agreed to come together to Paris were accepted to participate. In preparation for the workshop, these teams had to hand in a co-designed project (course syllabus) that they intend to actually teach in Fall 2017. For Spring 2018, we plan to assess the co-designed projects.

The aim of the following poster presentation is to report back on the workshop and to present the first results of the faculty-librarian collaboration. The poster will take a comparative approach by selecting a variety of syllabi that had been used during the workshop in order to illustrate the co-designed integration of the Framework into a disciplinary course. Hence, we will present 'before-' and 'after-the-workshop' syllabi to compare and highlight important changes and additions inside the contents of the syllabi. In a final step, we intend to report back on the collaboration process itself and how faculty members and librarians co-designed the syllabus. What are the lessons learned out of the workshop and which steps were crucial to make this collaboration a success story?

Keywords: *information literacy (IL), ACRL IL framework, faculty and librarian collaboration, AMICAL*

[10] The AMICAL Information Literacy Committee is part of the AMICAL Consortium, an international consortium of American-model and liberal arts institutions of higher learning outside of the US.

Teaching Science with the I-LEARN Model

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The I-LEARN model, which is an information literacy model developed by Neuman (2011), is a learning framework that enhances students' competencies in analyzing various types of information. Since 2012, her research team has conducted a series of studies in elementary and middle schools in Philadelphia (Lee, Tecce DeCarlo, Grant, & Neuman, 2016) to validate this model in educational settings. The components of the I-LEARN model focus on: **I**dentifying a researchable question, **L**ocating relevant information, **E**valuating the given information, **A**pplying the new information which is the outcome of the students` learning, **R**eflecting on the process and product of their learning, and k**N**owing how to answer other researchable questions that might arise during this process or in any other learning experience (Neuman, 2011). The I-LEARN model is based on an inquiry approach to learning and can provide a useful framework for elementary and content area teachers to guide and evaluate their students' inquiry processes in information-rich environments. In addition, the model provides a useful teaching tool that is linked to meaningful learning in the information age.

This poster will focus on six constituent elements of the I-LEARN model as well as its sub-components in considering the water cycle from a second-grade science book. For students, understanding aspects of the natural environment keeps them both satisfied and curious (OBE & Qualter, 2014). We found evaporation, condensation, and precipitation cycle as one of the most challenging topics second-grade students learn about in the US. This topic will be explained using the I-LEARN model and the teacher's and students' roles will be discussed separately. One of the salient features of this model is its recursiveness that allows students to come up with new inquiries even after learning about an unfamiliar topic and to work on new questions at the end of the sixth stage of the model. The poster will offer examples of how second-grade students might come with new questions related to the water cycle such as clouds, weather, or the sea. The recursive nature of the water cycle is similar to the stages of I-LEARN enabling second graders to have a better understanding of the model. In addition, the theoretical background that supports the different stages of the model, as well as 21st-century learning skills that can be fostered by this model will be reviewed (Neuman, 2011a). Finally, the poster will offer practical recommendations for librarians and teachers interested in fostering their learners' 21st-century knowledge and skills critical thinking, collaboration, contribution, and creativity in the area of science education.

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Keywords: *I-LEARN, pedagogy, teaching/learning*

Research Progress of Chinese Online Health Information Behavior from 2012 to 2016

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Purpose

China has been raising people's living standards, but new challenges to a healthy society have also emerged. With the increasing attention for Chinese people on their own health, obtaining health information through the internet has become an obvious trend (Yunfeng Sun,2016). Research on online health information behavior can be helpful to understanding the characteristics and impact factors of online health information behavior, provide guidance for medical institution's intervention, and improve people's health literacy. In this paper, the author concludes the research outcomes about online health information behavior in China from 2012 to 2016 and hopes to provide references to the researchers working in this field.

Methodology

The research data are comprised of Chinese research data and English research data published by Chinese scholars. Chinese research data comes from the CNKI (China National Knowledge Infrastructure) database and the Wanfang Data Knowledge Service Platform. English research data comes from Web of Science. After artificial selection, there are 62 relevant papers. This paper is designed to offer a systematic review of Chinese online health information behavior research in the last 5 years. The author introduces the distribution of research outcomes by utilizing SATI (Statistical Analysis Toolkit for Informetric) to analyse the quantity, organization, research areas, and keywords of all relevant papers and summarizes the main research object, method, and research content in this research field.

Outcomes

The small number of research outcomes and the limitation of research objects and methods shows that the research progress of Chinese online health information behavior is still in the initial stage. The objectives and methodology of this research field is still expanding and Chinese researchers are trying to absorbing theories and techniques from other disciplines. With the rapid rise of e-health, there are still large potential in this research field. Although Chinese researchers can draw lessons from foreign research outcomes, different national conditions, culture, geography, living environment, ways of thinking, and economic position can lead to different user behavior (Shifu Zhang,2008). Chinese researchers are supposed to bring forth new ideas in this research field based on the fundamental realities of the country.

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Keywords: *research progress, information behaviour, online health information*

Co-Authoring Networks in Information Literacy in Brazil

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One of the assumptions in scientific communication is the dissemination of knowledge built by researchers with the goal of contributing to the advancement of science. In the scientific field, it is found that the emergence of new informational resources as a consequence of technological advances, promoted the expansion of social networks in scientific production, especially stemming from new forms of collaboration together with the promotion of free access to scientific information. Thus, this work is developed within the activities of a Scientific Initiation Project, in the Course of Biblioteconomia e Gestão de Unidade de Informação (CBG), of the Universidade Federal do Rio de Janeiro (UFRJ), which was the first course to offer the discipline 'Information Literacy' in its Pedagogical Project. The main objective here is mapping co-authoring networks from the perspective of the scientific production in Brazil, and also by Brazilians studying abroad, from 1978 to 2016, in order to develop research in information studies, especially those regarding Library and Information Science. As a theoretical reference, it adopts the collective approach of information practice and the socio-interactionist lens of Information Literacy, also covered by authors like Regina Maria Marteleto (2001), Reijo Savolainen (2007), the American Library Association (2016) and Paulo Freire (1996; 2005). It presents the authors with more centrality in the field of Information Literacy, and also the relationships that are established on a personal and institutional level. The methodology is based on a qualitative-quantitative exploratory approach focusing on the use of social network analysis coupled with research data collected in a systematic literature review. This research adopts as the basis for the data collection and analysis the indicators proposed by Regina Belluzzo (2017) in her studies on Information Literacy. As a partial result, it indicates that the process of scientific development in Brazil presupposes collaborative informational practices in publications with a high level of Qualis classification of Postgraduate Programs concentrated in the South and Southeast regions.

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Keywords: *information literacy, social networks, co-authoring, Brazil*

Why Not Take a Scientific Approach to Teaching Information Literacy Skills?

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Do you want to be a better teacher? Do you want to get help, but are you afraid to let anyone see what happens in your classes? Are you required to have your instruction sessions evaluated by a colleague or a supervisor? This poster shows how to use two nationally calibrated tools to make your lessons more engaging and therefore help students retain more of what you are trying to teach. These tools, the Teaching Practices Inventory (TPI) and the classroom observation tool (COPUS), are based on the best pedagogical evidence we have about how we learn. Using these tools will point to ways to improve so that your students can learn more of what they need to know.

This poster will give you a short background about the importance of active learning for helping all students, especially minorities, succeed in a classroom (C. E. Wieman, 2014). There will be an example of the TPI developed by leaders in the field for teaching science to non-majors. We will consider how to apply it to our one-off information literacy sessions in libraries. Consider how to adopt techniques developed from this nationally calibrated inventory of effective teaching to see areas where you can improve our own instruction (C. Wieman & Gilbert, 2014).

The same professors who developed the TPI for effective teaching, have a classroom observation model, COPUS, that can be used as an important part of a peer coaching program (Smith, Jones, Gilbert, & Wieman, 2013). The process results in a mix of qualitative and quantitative data about what you and your students are doing. Armed with this information you can clearly see if and where you have room for improvement. There will be examples of how our institution was able to use the information gathered to create documentation that helped with contract renewals and end of year evaluations. More significantly, the data we collected with these tools helps demonstrate our value to education.

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Keywords: *peer coaching, active learning, pedagogy*

The Concept, Standard and Education of Critical Information Literacy

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The concept of Information Literacy (IL) was originally proposed by the Paul Zurkowski (Chairman of the American Information Industry Association) in 1974. Over the past four decades, the concept of IL has had a deep impact on higher education and library education. The research on IL is also very rich. With the emerging new media technology based on Web 2.0, the traditional concept of IL is challenged. Some critics advocate the application of critical theory to IL, and that the focus of information literacy should be critical thinking. Over the past decade, Critical Information Literacy (CIL) has received more and more attention, and the number of research on CIL has also increased rapidly. The research results involve the discussion of concepts and the application of theory to teaching practice. In February 2015, Association of College and Research Libraries released the *Framework for Information Literacy for Higher Education*, trying to re-examine IL in a more and more complex information environment. The concept of 'Metaliteracy' has absorbed a large number of criticalist ideas and embodied the concept of CIL. In this study, we mainly use the literature analysis and case analysis method. There are five main types of literature: research papers, dissertations, conference papers, monographs, and standard literature. Through the review of research on CIL, we combine the concept and standard of CIL, and also the development process and current situation of its education. In addition, we discuss what is critical, why should it be critical, and deeply explore the evolution of CIL. The research on IL started relatively late in China and the practice of CIL is also lacking. At present, most colleges and universities in China have set up basic courses of IL, such as the application of computers, literature retrieval and so on, but the effect is not significant enough. The students' IL is generally low and it is necessary to strengthen its education. Through analyzing the content and model of other countries' CIL education cases, we hope to provide reference for the development of CIL education in China.

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Keywords: *critical information literacy, concept, standard, education*

WORKSHOPS

Teaching Source Evaluation in a Politically Polarized Moment: Exploring Metacognitive Practices & Critical Pedagogies (Workshop)

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Recent events like the Brexit referendum and the 2016 U.S. presidential election and have raised growing concerns about political polarization, fake and misleading news, and the apparently increased acceptance of 'post-truth' (thinking that is shaped more by emotional appeals and individual beliefs than by objective facts). At the same time that this sociopolitical moment illustrates information literacy's critical relevance, it also presents unique pedagogical challenges. Perhaps the most difficult of these is how to cultivate a welcoming yet challenging classroom environment in which all participants critically and constructively examine and dialogue about not only objective criteria for source evaluation, but also about the powerful roles that personal beliefs, background, and identity play in how people evaluate and engage with information, and in particular with sources that may evoke strong emotional responses.

Objectives

The current sociopolitical climate both in and beyond the United States thus reflects a need for information literacy educators to address more fully the cognitive and affective learning domains, as well as the social, political, cultural, and structural conditions that influence information production and circulation and public discourse. Holistic and critical pedagogies that emphasize the value of reflection and dialogue may prove particularly useful for developing such instruction. In this interactive workshop participants will explore and develop reflective, metacognitive, and critical approaches to teaching about source evaluation.

Methodology and outcomes

First attendees will be introduced to key theories of cognitive development and identity formation that are central to learning and, more specifically, to conceptions of 'truth,' relativism, and ideological belief (Hofer & Pintrich, 1997; Ambrose et al., 2010). These theories will be related to central principles of holistic and critical pedagogies, such as John Dewey's (1916) emphasis on reflective inquiry. Participants will also consider related teaching practices that encourage reflective and metacognitive approaches to source evaluation and that involve acknowledgement of one's own perspectives, beliefs, and potential biases (Ambrose et al., 2010; Brookfield, 1995). Then in small groups attendees will develop instruction activities that encourage reflective and critical engagement with source evaluation. Groups will share activities with one another and articulate connections between their activities and related pedagogical concepts and approaches.

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Keywords: *news literacy, metacognition, affect, critical pedagogy*

Advancing Diversity and Inclusion in the Classroom and Beyond: Intersectionality and Critical Information Literacy

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Background and Objectives

Intersectionality as a theoretical framework considers overlapping areas of identity such as race, class, gender, and sexuality for analyzing social structures and individual experiences (Collins, 2015). Using numerous lenses to investigate topics can be unsettling for learners of many levels and can also challenge deeply held beliefs. Examining the intersections of racism, sexism, ableism, and other forms of injustice is a key concept for women's and gender studies scholars with far reaching possibilities for many other disciplines (Launius and Hassel, 2015). How might we apply intersectionality to our information literacy instruction to facilitate critical inquiry? How would this instructional approach have an impact beyond the classroom setting?

In this workshop, facilitators will present an overview of intersectional theory, its application across diverse disciplines, and its impact in the workplace setting. The presenters will also provide examples of critical information literacy activities including using zines to facilitate critical analysis of authorship, intersectionality, and making the voices of marginalized groups central. Workshop participants will be invited to reexamine current information literacy instruction plans with an intersectional lens, either using a class plan they currently use or from examples provided.

Participants will also reflect and share their ideas for exploring intersections of race, class, gender, and sexuality in the context of information literacy teaching and learning. In this discussion-based session, participants will raise and address questions (in pairs and in large groups) about the challenges and benefits of exploring intersectionality, as well as strategies they would use to explore intersectionality in their information literacy sessions. Participants will also reflect and share how teaching and learning about intersectionality could influence learners beyond the classroom by preparing them to work in diverse and inclusive organizations, and to become fully engaged citizens.

Outcomes

Participants will:

- Gain and share strategies for exploring intersectionality in their information literacy sessions.
- Articulate the benefits of using such strategies to facilitate student learning
- Share ideas for integrating critical information literacy and intersectionality into the curriculum.

The target audience is librarians and other staff who work with students at educational institutions.

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Keywords: *intersectionality, critical information literacy, diversity, inclusion*

Before You Teach! Assessment Basics: Why, What, & How

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Is your instruction effective? Is your time well spent on it? Gathering data through assessment can help you respond to these questions with evidence (Oakleaf; Angelo & Cross). ACRL's 2016 Top Trends in Academic Libraries includes "Evidence of learning: Student success, learning analytics, credentialing." This includes analyzing and tracking student progress, with "an emphasis on learning outcomes, retention, and matriculation." In addition, an increasing emphasis on competency-based learning and 'altmetrics'," alternative means of measuring the impact of research and scholarship (Khodiyar, Rowlett & Lawrence), underscores the critical importance of assessment in education, and workplace training. People want to know what they are getting for their money, the return on their investment (ROI). Assessment, as part of a training/instructional program planning cycle, offers a means of providing evidence to support the value of instruction. It can also provide insight into specific areas that need improvement or additional emphasis.

Objectives & Methodology

Workshop attendees will participate in interactive exercises where they will:

- list reasons to assess instruction of various kinds
- define Goals, Objectives, and Expected Learning Outcomes (ELOs)
- identify the elements of ELOs
- discuss reasons to assess the effectiveness of instruction
- describe what to assess
- identify important questions to pose regarding assessment
- distinguish among four levels of assessment
- complete and assess the purpose and value of sample classroom assessment techniques (CATs)

Outcomes

Workshop attendees will:

- describe how assessment fits into the instructional program planning cycle
- identify one purpose for writing Goals, Objectives, and ELOs prior to instruction
- pose relevant questions regarding the purpose of assessment
- identify which forms of instruction to assess at their institutions or organizations
- select levels of assessment for instruction of various types
- incorporate assessment into the planning process prior to implementing instruction

The target audience is librarians who teach or train at any educational level or age.

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Keywords: *assessment, classroom assessment techniques, information literacy instruction*

Informed Learning Design: Shaping Learning through Engagement with Information

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Informed learning is an approach to information literacy that offers a pedagogic framework for enabling students to use information to learn (Bruce 2008). By using information in the context of learning course content, learners may become more aware of how they may use information in future academic, personal, and workplace learning situations. Implementation of an informed learning approach can be challenging for educators not familiar with intentionally creating learning environments in which students use information to learn. This workshop will introduce *informed learning design*, a curriculum design model for designing learning environments that foster critical and reflective engagement with information in the context of learning content (Bruce, et al., in press).

Informed learning design is grounded in informed learning (Bruce, 2008), the variation theory of learning (Marton and Tsui 2004), and backwards design instructional theory (Wiggins and McTighe, 2005). Drawing from variation theory (Marton and Tsui 2004), using information may be considered the "process" of learning about content (Bruce, 2008; Lupton, 2008). For example, "collecting and analyzing" texts by select authors may be considered the process by which a learner comes to understand a literary movement. Informed learning design also draws structural elements from the backwards design model (Wiggins and McTighe, 2005), which begins by defining learning outcomes to inform the selection of learning activities and assessments. In informed learning design, the key characteristic of each step involves identifying the interplay between subject content and critical information processes. The workshop will focus on the first and last steps of the informed learning design process in which participants create an informed learning outcome(s) and identify learning activities that leverage specific ways of using information to enable disciplinary learning.

Session Outcomes

- Attendees will develop a greater appreciation for the various ways information can enable disciplinary learning.
- Attendees will utilize elements of informed learning design to develop instruction that fosters learning through reflective engagement with information.

Session Activities

- Reflection and discussion about the role information plays in learning about a subject.
- Role-play activity focused on developing informed learning outcomes.
- Small group activity focused on identifying informed learning activities.
- Plenary discussion and reflection concerning how engaging with information influences disciplinary learning.

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Keywords: *informed learning design, informed learning, curriculum design*

Showcasing Information Literacy: Library Events and Programs

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When librarians talk about information literacy, there is often a focus on information literacy *instruction* -- guided by questions like, "how can libraries and librarians help students become information literate?" This presentation/workshop will cover another side of the library's role in facilitating information literacy: providing presentation, networking, and leadership opportunities for students who have already developed high-level information literacy competency. Because of their advanced status, these students are often about to graduate and begin professional or academic careers. Library events that celebrate these students' research and other academic contributions both demonstrate the value of information literacy and also help students make the shift to workplace information literacy by preparing them for professional research, presentations, and networking.

The workshop leaders come from the University of Washington's Research Commons, an interdisciplinary and collaborative library space focused on providing events and programs for student researchers. Research Commons programs have included graduate student lightning talks, structured networking activities, poster sessions, exhibits, specialized consulting services and workshops, and more. All programs focus on building interdisciplinary connections and knowledge, with the understanding that students who are highly information literate within their disciplines may still have much to learn about the research process in other related fields—fields they may collaborate with as professionals after graduating. By bringing together students from varied yet related disciplines, Research Commons events open up space for accomplished students to connect with each other and to grow as researchers, and for novice students to see the fruits of advanced scholarship and information literacy.

The audience for this workshop is primarily academic librarians who work with students in any capacity, although public librarians who organize events and other programming may also be interested. The workshop leaders will share new program and event models from the Research Commons, with a focus on programs and events for highly information literate students preparing to enter the workforce. Workshop attendees will try out potential library programs by engaging in an interactive collaborative activity that models a Research Commons program. They will also use case studies of student researchers to explore different information literacy programming options. Presenters will lead attendees in small-group discussion about how they can identify user needs and implement similar programs at their own institutions, and then attendees will get feedback on their event ideas by doing a "creativity sprint" brainstorming and feedback activity. Discussions will cover program scalability and adaptability as well as program ideas; attendees will consider what might make particular events or programs a good fit for their own institutional context. Attendees will leave with several ideas about programs they may be able to implement at their own colleges and universities.

Keywords: *interdisciplinary, responsive, advanced students, library events, research sharing*

PANELS

Information Literacy, Research and Education: an International Comparative Perspective

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Information literacy has been a matter of interest in the professional field of librarianship for many years, especially among school and academic librarians. During the last decade information literacy has also become the object of solidly based theoretical research, which contributes to more varied understandings of the concept that in turn may lead to changing approaches to teaching and learning. Since the rise of the digital era, information literacy appears as a central topic on education policy agendas, although heterogeneous among countries. The purpose of this panel is to compare policies, strategies and conceptions of education on information in Europe and to propose a comparative framework.

The point of departure of the discussion and the proposed framework is a series of recent international studies, which will enable political, theoretical and practice based comparison. The relationship between and specific foci of current concepts such as information literacy, digital literacy, and media literacy will be touched upon in order to discuss the meaning and implications of the different terms. The panel will cover issues related to information literacy education directed at various age groups, set in various educational contexts and cultures and related to policy documents. Diverse theoretical approaches will be compared for clarifying a range of aspects of information literacy practices.

Plan for Panel

a) Introduction: A comparative framework for education on information in Europe;

b) The panelists will then use ten minutes each to present their contributions to the comparative framework, including geographical, cultural and political aspects;

c) After these presentations the topic will be open for questions and discussion with the audience; and

d) The panel will wrap up via possible conclusions and future prospects.

Participants

The participants of the panel have their backgrounds in France, Sweden and Great Britain and they all have broad international experience.

Keywords: *information literacy, education policy, political comparison, information practices, international aspects*

Academic Reading Format International Study (ARFIS): a Discussion with the Researchers

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The Academic Reading Format International Study (ARFIS), which investigates the print and online format preferences and behaviors of university and college students when engaging with their academic texts, was born at the European Conference on Information Literacy (ECIL) in 2014. After the presentation of the first country study, dozens of researchers expressed interest in replicating the same study in their home countries. An opportunity thus arose to form an international network to share country results and explore the consistencies, variations, and generalizations of behaviors from the findings. The first round of ARFIS included researchers in 19 different countries with over 9,000 student participants (Mizrachi, et.al. 2016). Researchers in an additional 15 countries participated in the second round, and a third round is currently underway in at least two more locations. Many researchers have published their individual country results in local and international journals as well as presenting them at ECIL 2015 and 2016. The ARFIS Facebook page and website (http://arfis.co) have also generated much worldwide attention.

This panel of 4-8 ARFIS researchers from different countries will hold a discussion comparing their individual experiences of ARFIS participation: the highlights, challenges, impacts of the process and results, and future follow-up ideas. Mizrachi, Boustany, and Kurbanoğlu, the ARFIS coordinators, will act as moderators and begin the session by talking about their experiences in conducting this large-scale multinational research study (preparations, organization, process, problems). Panelists will then be asked for their perspectives using the following discussion prompts:

- Name one or two specific highlights from your experience in ARFIS.
- What were the greatest challenges you faced and how did you overcome them?
- How have you disseminated your country results (publications, presentations, reports)?
- What has been the reception of your results by your colleagues and administrators? Has there been any impact on institutional policies?
- Do you believe any specific local factors impacted your country results? How?
- What are your ideas and plans for follow-up? Has this spawned any new collaborations? Do you foresee a follow-up study in the future for tracking behaviors over time?

Audience participation and questions will be welcomed. Expected outcomes for all attendees include greater understanding of the print and online format behaviors that ARFIS has uncovered, raising questions not yet addressed that should be considered, and an intimate view of the design, procedures, and operation of a large international collaborative study.

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Keywords: *print reading, electronic reading, academic reading, international studies, college students*

Copyright Literacy and the Role of Librarians as Educators: an International Symposium

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Members of the International Panel on Copyright Literacy[11]

This international panel will discuss the knowledge, skills and behaviour associated with 'Copyright Literacy' (Morrison and Secker, 2015), the requirements for current and future library professionals and how the community can share best practice and research from around the world.

In recent years researchers and practitioners from 14 countries have collected data from the multinational copyright literacy survey. Focusing on the levels of knowledge and skills of librarians and other professionals in the cultural heritage sector, the survey findings were significant for copyright education. This includes the need for greater inclusion of copyright in the professional qualifications and CPD of information professionals, and enhancing their role in providing education and support for their communities. Libraries around the world have significant privileges in the form of copyright exceptions, yet there remain calls for greater harmonisation and an extension of these privileges to support education and research. Librarians are represented at bodies such as the World Intellectual Property Organisation (WIPO), but continue to need to lobby for exceptions to support education and research and the services that libraries provide, for example, lobbying from the library profession for reform such as the Marrakech Treaty which allows equal access to material in accessible formats. However, this lobbying work is often far removed from the daily experiences of librarians' dealing with copyright in their professional lives. Here research from the UK suggests that for many librarians copyright is a 'problem' and one that many try to avoid.

Todorova et al. (2014, 2017) highlight patterns and differences in the skills and knowledge of librarians across different countries, with some having significantly higher levels of knowledge than others. Institutions in countries such as the UK and US are more likely to have an individual with responsibility for copyright matters. The data highlights other trends, and this international panel will discuss those differences and why they exist. The panel will share good practice in copyright education and focus on why this knowledge is so important, as well as the value of copyright exceptions. The panel will discuss the role of international organisations in facilitating sharing of good practice but will also concentrate on the role of librarians within their organisations to educate others about copyright law, exceptions, and issues such as open access and open education. The focus will be on how best to improve copyright education in support of a fairer and more equal society.

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Keywords: *copyright, digital literacy, global education, copyright literacy, LIS*

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Theorising Information Literacy

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This panel aims to open up discussion about the nature of information literacy (IL) and about theory within IL. Johnston and Webber (2006) have argued that IL should be regarded as a discipline. However, others have contested this, e.g. seeing IL as being embedded within other disciplines, as needing augmentation from other literacies (see discussion in Nazari and Webber, 2012), as being part of information science, or, conversely, decontextualizing IL from information science to reposition it in relation to Critical Theory or liberal arts (e.g. Tewell, 2015). IL has also been interpreted from different perspectives (i.e. different theoretical standpoints, or differing categorisations of the literature). This could be seen as a way of illuminating the complexity of an emergent field, or alternatively as revealing fractures within it. For example, Limberg, Sundin & Talja (2012) characterise IL as a field of research, rather than a discipline, proposing that the term 'information literacies' better captures its varied nature when seen through different theoretical lenses. Lloyd (2010) frames IL as a critical information practice, drawing on Practice Theory to strengthen IL's theoretical grounding. Budd and Lloyd (2014, pp1.) have, further, debated how theoretical frameworks might "form an even richer and more robust underpinning for the work of information literacy". Le Deuff shows that IL can be defined as a "culture of information" (Le Deuff, 2010) in a wider perspective and argues that IL can be thought as a discipline of teaching with work on the concepts of the field. We contend that issues of disciplinarity and theory are not merely of theoretical interest, since these "underpinnings" will enable more robust and creative practice.

The panelists will reflect on: 1. how, or whether, IL can be conceptualized as a discipline or field of research; 2. what "theory" means within this field; 3. how, or whether, information literacy may be theorised; The panel members will concisely address each question in turn. After each question debate amongst other participants will be stimulated, with key viewpoints on each question captured for open access distribution after the event.

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Keywords: *information literacy, theory, disciplinarity, information culture*

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