University of Zagreb
Department of Information and Communication Sciences

The Second European Conference on Information Literacy (ECIL)

Dubrovnik, Croatia

20-23 October 2014

Editors: S. Špiranec, S. Kurbanoğlu, R. Catts, E. Grassian, D. Mizrachi, M. Banek Zorica

Abstracts

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(ECIL)

October 20th -23rd, 2014, Dubrovnik, Croatia

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Preface

I have the great pleasure to welcome you to the 2nd EUROPEAN CONFERENCE ON INFORMATION LITERACY (ECIL 2014).! Or, as we in Croatia would say: DOBRODOŠLI!

Following the success of the first ECIL conference held in Istanbul, Turkey in 2013, it took us only a year to plan and organize the second conference in Dubrovnik, Croatia. We could do it so quickly because the response during and after the first conference was very very enthusiastic - indeed, almost overwhelming!

The decision to organize the first two ECILs in Turkey and Croatia did not come suddenly or accidentally. ECIL was jointly conceived of, planned, and organized by people from the Department of Information Management of Hacettepe University in Turkey and the Department of Information and Communication Sciences of Zagreb University in Croatia and therefore we decided to host the first two conferences in these two countries.

In the course of organizing the first and second ECIL meetings it became clear to us that ECIL, as an event of its type, would be very unusual (and almost unique) in several ways. Conferences usually begin very locally and need time, usually years, to grow and mature sometimes into a national, and then, sometimes, they eventually become a truly international event. However ECIL was different. From the very start when we began to organize ECIL in 2013, for one thing, the conference almost immediately attracted participants from over 59 countries! And this year's conference has the same very wide and deep international dimension. We would like to see this wealth of diverse and broad interest not only as a feature of ECIL, but also as an attribute of the concept of information literacy itself, which relies heavily on a strong, diverse, wide, and determined professional community.

Numbers and statistics of the second ECIL can attest to this as demonstrated by the following. The gigantic number of 283 paper proposals were submitted to the conference! The variety of submissions underscored very widely different perspectives, methods, theories and outcomes,, ranging from the heavily theoretical to forthrightly practical and concrete contributions. All submissions were subjected to a double-blind review process and 165 were accepted. This book consists of a total of 174 contributions (1 introductory commentary, 2 keynotes, 6 invited papers, 93 papers, 7 doctoral papers, 29 best practices, 14 PechaKuchas, 16 posters, 4 workshops and 2 panels).

We are grateful to the many local, national and international organizations and individuals, both public and private sector, for their support. Our special thanks goes to Forest Woody Horton for keeping our spirits high and helping us out in times of doubt and uncertainty. We are also very grateful to UNESCO and IFLA, two major international organizations which have contributed tremendously to the development of IL. Irmgarda Kasinskaite-Buddeberg from the Knowledge Societies Division of UNESCO, Maria Carme Torras Calvo of the Governing Body of IFLA deserve our special thanks for their support and guidance.

We would also like to take this opportunity to thank ECIL 2014 conference keynote speakers Michael B. Eisenberg and David Bawden; invited speakers Bill Johnston, Louis Limberg, Maria Carme Torras-Calve, Sheila Webber, Andrew Whitworth; panel conveners; workshop presenters; authors and presenters of papers, best practices, PechaKuchas, posters; and session chairs. Our thanks go to all the authors who submitted their work for consideration, and the participants of ECIL 2014, for making the event a great success. Special thanks are due to the members of the Program Committee who worked very hard to ensure the timely review of all the submitted manuscripts,

Finally, I hope that you will fully enjoy 4 conference days of sharing, learning, questioning, networking and growing, and that you will remember your stay in our unique Dubrovnik as in many ways professionally rewarding and personally enriching.

Sonja Špiranec

Foreword

I am delighted to have been asked to write a brief preface for this publication containing abstracts of papers prepared and delivered by participants attending the European Conference on Information Literacy ECIL) meeting October 23-26, 2014, in beautiful Dubrovnik, Croatia.

As the world begins a new millennium we see all around us both tremendous opportunities and formidable challenges in all spheres of life --- political, economic, social and cultural. Chronic, long standing problems of poverty, disease, unemployment, governance, wars and unrest, and so on, remain unresolved and flare up almost daily in the printed news, on TV, in social media, and elsewhere. But at the same time, science and technology, entrepreneurs and creative minds in the laboratory, factory and office have given us incredible opportunities and amazing tools to help cope with these challenges. The Internet, handheld mobile devices, online search engines and similar inventions come immediately to mind.

But while these inventions, tools and opportunities continue to proliferate at an exponential rate, so does the information needed to be learned and applied in order to exploit all of these advances. The traditional basic literacies of reading, writing and numeracy are woefully inadequate for this purpose. Information resources are exploding in number and complexity, at such a rate so as to confront us with a unique historical dilemma - how can the human mind possibly search for, find, organize, understand, evaluate, and then apply these information resources to help solve personal, business, local community, national, and societal problems?

Information Literacy is the name of the concept that is coming to our rescue! I leave it to readers to delve into this publication's treasure trove of different approaches and practices being pursued by an international army of expert theorists, practitioners and teachers to discover what this concept is, how it can be applied in all facets of everyday life, and how it can help ordinary people to quickly and easily find, learn and use information to solve their problems and help them to make wiser and timelier decisions.

Good luck in this astounding and unique kind of adventure!

Forest Woody Horton, Jr.
Washington, DC
USA

October 2014

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Commentary on the Abstracts

Bill Johnston
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The following impressions are based on my reading of the *abstracts* for papers, posters, pecha kucha sessions, workshops and panels accepted for ECIL 2014.

During the conference I will be accessing a variety of sessions in order to present my further impressions and conclusions in the closing session of the conference. I look forward to meeting colleagues and hearing their views on the current status of information literacy and the directions for future research, practice and advocacy.

Introduction – What are we talking about in 2014?

The elements which constitute information literacy, as described in the abstracts, are mainly based on long-standing accounts of information literacy, such as those entailed in the ACRL Standards, Big6 model and other professional contributions. Consequently 'assessing' 'searching' ' managing' 'evaluating' 'applying' etc. are recurring key terms used to express the concept of information literacy. Additional terms in use include:

- digital literacy;
- health literacy;
- visual literacy;
- infographics;
- media and information literacy;
- information behaviour;
- trans-literacy;
- post-literacy.

This range of terms suggests an opportunity for a focused debate on the nature and scope of information literacy at this point in time.

A frequently used framing strategy in the writing of the abstracts is to position the significance of information literacy in relation to broader notions of:

- information society;
- digital society;
- multimedia society;
- knowledge economy;
- the 21st century.

These entities may suggest a relatively homogeneous perspective, with connotations of a particular kind of socio-technological formation and political economy. However complementary and alternative conceptions of information literacy are represented in the abstracts, which should serve to extend the discussion. For example:

- indigenous perspectives;
- post-colonial experiences;
- critical information literacy;
- socio-cultural interpretations of information literacy;
- radical information literacy;
- Green perspective.

Again an opportunity to discuss where and how information literacy connects to wider social and economic formulations and movements.

In essence we have the opportunity to talk about not only the micro levels of information literacy experiences, individual's searching for example, but also the broader social, cultural and historical contexts that encompass them.

Methodological Features

A number of studies are founded on research, with a mix of qualitative and quantitative methods in use. Research approaches and designs include:

- correlations between a chosen population's perceptions and capacities, and an established professional/governmental framework for information literacy;
- comparative evaluations of specific technologies and course designs;
- phenomenography;
- ethnography;
- action research;
- grounded theory;
- bibliometric analysis and systematic literature reviews

Equally a number of the studies offer detailed accounts of projects, new service designs and collaborative initiatives aimed at improving practice and raising the profile of information literacy in particular institutions.

Universities

The bulk of contributions is from higher education institutions and mainly constituted by examples from university library practice. They illuminate multiple aspects of academic practice including:

- adoption of educational theory and concepts as a basis for pedagogical decision making;
- introduction of relatively new constructs, such as 'Threshold Concepts';
- expanding/evaluating the range of technologies, particularly mobile devices, entailed by blended learning;
- gameification of instructional design and teaching practice;
- emphasis on active, collaborative, inquiry-based pedagogy to engender independent learning, critical thinking and a wider range of academic and professional skill;
- acknowledgment of the importance of systematic course design as a key element of academic practice;
- focus on assessment of learning;
- specific initiatives for postgraduates and post doctoral students;
- discipline specific examples, including LIS education programmes;
- dealing with plagiarism and academic dishonesty.

Dissatisfaction with 'one-shot' teaching sessions is evident and linked to moves to develop longer sequences of integrated activities, with a much greater engagement with disciplinary and professional curricula and university-wide values and strategic objectives. Consequently there is attention to larger units of analysis and action such as Freshman/First Year Experience initiatives, and institution/department-wide reform and re-design of curricula.

It seems clear that many university librarians are determined to make their universities more information literate, and to do this by moving their teaching and instructional services forward as part of educational development in their organisations.

Primary and Secondary Schools

A significant number of contributions focus on this sector and include:

- implementation of national curricula;
- teacher/librarian collaboration;
- inclusion of parents and families in supporting pupils;
- online 'risks' and 'safety';

- entailing information and other literacies in curricula and school practice;
- measures to improve pupil information literacy.

Public Libraries

Whilst there are a small number of contributions, there is a strong sense of 'mission' to provide information rich environments for the widest range of patrons to meet their varied purposes, and to foster the skilled use of information technologies in the service of that mission. There is an equally strong sense of combating inequality and helping marginalised sections of the community. Given the capacity of public libraries to impact large and varied populations, the number of contributions should not be taken as a potential weakness for the conference.

National Studies

A variety of studies are provided including:

- information literacy in citizen development;
- public libraries contribution to socioeconomic inclusion;
- sectoral and cross-sectoral overviews of information literacy policy and practice;
- whole age group studies;
- specialist groups studies;
- historical accounts of information literacy;
- development of a professional community of practice for information literacy;
- database development;
- implications of copyright legislation.

The range of national origins of these contributions goes beyond the formal borders of Europe and underlines the strong international character of the conference.

Themes

The themes I identified are diverse; some are discussed singly in their own right, whilst others are entailed in particular contexts. Themes include:

- nature and definition of information literacy;
- relations between research and practice;
- nature and meaning of 'reading' in understanding information literacy;
- implications of changes in copyright arrangements in digital publishing;
- generational approaches, seniors as well as younger age groups;
- media socialisation.

Conclusion – Where are we going in 2014?

It is difficult to sum up the riches promised by the abstracts, however my short formulation of the direction of travel is – *creating information literacy and lifelong learning for digital citizenship in the 21st century*.

End.

Bill Johnston

12/09/14

KEYNOTES

Lessons Learned from a Lifetime of Work in Information Literacy

Michael B. Eisenberg

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Professor Eisenberg, who will be retiring this coming January after 44 years as a teacher, researcher, and administrator, looks back over his career to share several key information literacy milestones that are representative of significant developments in information literacy in relation to education, information and library science, and/or information technology. In this keynote, Professor Eisenberg will share stories about the nature and scope of information literacy efforts while focusing on lessons learned, implications, and looming challenges and opportunities.

Being fluent and keeping looking

David Bawden

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The complexities of the many concepts and models around information literacy are considered, and some personal views given as to how they may best be clarified, both theoretically and practically. A slightly adapted idea of the concept of information fluency can serve as a main general purpose for the promotion of information literacy, expressed as a more specific meta-model for the prevailing technological environment, and as still more specific components for a particular context. The focus of this relatively stable general formulation is on understanding, rather than skills or competences. It can incorporate the need for education, advice and counseling, as well as information provision, and with domain-specific literacies, as well as supporting personal information literacy.

Keywords. *Information literacy models. Digital literacy. Information fluency. Domains.*

INVITED PAPERS

Information Literacy in the United States: Contemporary Transformations and Controversies

Tefko Saracevic

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The aim of this presentation is to provide an overview of library efforts toward information literacy in the United States with a concentration on evaluation of the 2014 official suggestion by the American Library Association (ALA) for a new framework for information literacy for higher education.

Information literacy in the US has a long history. It started with library instruction, also referred to as bibliographic instruction, at the end of 19th and beginning of 20th century. It transformed into information literacy by the end of 1980s. Fueled by emerging challenges resulting from great changes in information technology and rapid increase in available information the Association of College and Research Libraries (ACRL) (a division of the ALA) issued a landmark report about information literacy considering it *"a survival skill in the Information Age"* (ACRL, 1989). The report also defined information literacy in personal terms: *"to be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information."* This definition and personal orientation was widely used ever since. A decade later this was followed by a report providing a set of standards that provide *"a framework for assessing the information literate individual"* (ACRL, 2000). Five standards and twenty-two performance indicators were included, focusing upon the needs of students in higher education and a range of outcomes for assessing student progress toward information literacy. The standards with outcomes are suggested *"as guidelines for faculty, librarians, and others in developing local methods for measuring student learning in the context of an institution's unique mission"* (ibid.) To cover schools (kindergarten to grade 12) the American Association of School Librarians (AASL) (also a division of ALA) issued its own standards focusing on different school disciplines and also focusing on learning for life: *"with a heightened demand for critical thinking and collaborative problem solving, students* ***must*** *develop the skills to become lifelong learners."* All these activities had a wide impact. Great many academic and school libraries developed strategies, and offered programs, courses, guides and the like for information literacy. Other countries used or adapted the standards – impact was global. However, by the end of their first decade the world around standards changed.

At the start of 2014 an initial draft proposed a new framework for information literacy for higher education (ACRL, 2014). The purpose was to invite comments and stimulate discussion. It is not a final product. Thus, my discussion here is really a comment. The 2000 standards are replaced: "*The Framework moves beyond the Standards' conception of information literacy, which provides a limited, almost formulaic approach to understanding a complex information ecosystem."* A proper justification is offered: "*The changes in higher education, coupled with a more complex information ecosystem than existed at the end of the last century, demand new engagement with the concept of information literacy."* Even a new definition is offered using a notion of information ecosystem rather than just information: "*Information literacy combines a* ***repertoire*** *of abilities, practices, and dispositions focused on expanding one's understanding of the information ecosystem, with the* ***proficiencies*** *of finding, using and analyzing information, scholarship, and data to answer questions, develop new ones, and create new knowledge, through* ***ethical participation*** *in communities of learning and scholarship."* It is suggested that the expanded conception of information literacy also calls for a creation of a more open framework. An approach called "threshold concepts" is used as the basis for the Framework. Threshold concepts have grown out of pedagogical research in the United Kingdom (Meyer & Land, 2003). They offered the following as (or instead of) a definition "*A threshold concept can be considered as akin to a portal, opening up a new and previously inaccessible way of thinking about something. It represents a transformed way of understanding, or interpreting, or viewing something without which the learner cannot progress*." The characteristics of that concept are enumerated as: *transformative, probably irreversible, integrative, possibly bounded*, and *potentially troublesome*. Hofer et al (2013) supported that approach, while at the same time offering a summary of critiques of existing standards.

Unfortunately, threshold concept is not an appropriate and fruitful approach to using a pragmatic framework for information literacy; it not a testable theory at all. Even though articles appeared as to being appropriate or adaptable to several disciplines, it has never been tested empirically or experimentally. There is no

evidence-based practice of threshold concept in any discipline. Thus, it is highly unlikely that the proposed framework can be fruitfully developed for empirical application based on threshold concept. Other proposals, such as by Kuhlthau (2013), would certainly be more appropriate.

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Libraries Furthering Development: Media and Information Literacy in the Post-2015 Development Framework

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Access to information is a pillar of sustainable development for the long-term socio-economic prosperity and well-being of citizens. However, physical or digital access to information is not enough for development. Media and information literacy is just as crucial. This paper has two main goals. First, drawing on the findings of the *IFLA Trend Report*, the paper discusses the increasing importance of media and information literacy in the constantly changing media and information landscape citizens live in. The key role that libraries can play in furthering development is addressed. Through media and information literacy education, libraries can be agents of change, rather than passive witnesses to continuously evolving media and information ecosystems. Secondly, the paper presents the advocacy work that the International Federation of Library Associations and Institutions (IFLA) is doing to put access to information, and thus media and information literacy, on the UN Post-2015 Development Framework agenda.

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Keywords: media and information literacy, libraries, development, Post-2015 Development Framework, advocacy, IFLA.

Information Literacy as an object of research – in tension between various fields

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Over the years, as a researcher, reviewer and examiner in the field of information literacy (IL) research, I have observed that such research is being attributed varying positions in relation to other research fields: 1) as an independent research field, where the collected body of research is being considered as limited to previous IL research; 2) information literacy as part of learning research; or 3) information literacy as part of the broader LIS field of information needs, seeking and use. In the current millennium, with issues of digital media and rapidly changing ICTs being of central interest to most IL research, suggestions about a range of various literacies are brought to the fore; media literacy, digital literacy, visual literacy, etc. This in turn has led to an increased interest in the relationship between information (and other) literacies and the broad and somewhat different field of literacy research. One assumption from this brief overview is that the variation in positioning as well as naming IL research and core terms may weaken the field of IL research due to disregard of an existing body of research conducted under a different label. This in turn may be due to conflicting research interests connected to academic, professional and political spheres. An alternative assumption would be that IL research might be reinforced by being approached from a variety of disciplinary research interests. A third assumption is that IL research might be strengthened by being more clearly positioned as a field of the discipline of LIS.

The aim of the paper is to discuss the implications of the various positions and connections ascribed to information literacy research for both theory and practice. This discussion will be pursued through an analysis of selected examples of academic papers presenting or advocating different statements on the position of IL research in relation to disciplinary as well as professional interests.

The view of IL as an independent research field finds its roots in the fact that IL emerged from professional practice. The body of research emerging from this background is often framed in various models or lists of generic skills together constituting information literacy.

The view of IL as belonging to the field of learning is strongly connected to theories of learning and less tied to LIS research on information behaviour or practices. Christine Bruce and her team are strong advocates of information literacy as inscribed in the field of learning (e.g. Bruce 2008).

In Nordic academic research it is common to view IL research as part of the larger field of information needs, seeking and use (information behaviour/information practices). The basis for this stance is that information literacy is about appropriate ways of seeking and using information in various formats and via various tools for various purposes (e.g. Limberg & Sundin 2006).

The paper will suggest ideas for framing IL research within the dual perspectives of INSU and learning research and argue for benefits of this for both theory and practice.

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Keywords: Information literacy research, learning, information behaviour, information practices

Towards a Radical Information Literacy

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Zurkowski's formulation of 'information literacy' (1974) focused on the need to develop IL skills *in* the population, to maintain economic primacy in an era of increasingly large, digitized "information banks". But his contemporary Cees Hamelink's paper, *An Alternative to News* (1976), presented a different view. Hamelink considered it essential that IL be developed *by* individuals and communities, autonomously, to defend against perspectives pushed at them by the broadcast media. This view of IL developed from Freire's (1970) model of literacy – a liberatory 'pedagogy of the oppressed' that develops an *authority over text* within the empowered community.

Subsequently, Zurkowski's model of IL has been developed through research and practice, but Hamelink's paper has been cited infrequently. Yet the distinction between the two perspectives remains an important one. Hamelink's view of IL is one in which the development of information literacy in an individual or community permits the *redistribution of authority over information practices* among the members of that community. This can be counterposed with forms (or frames: Bruce et al 2006) of IL education that instead conceal these structures of authority over information practice, and thus reinforce them. These frames are frequently institutionalized in higher education, and in library and information science, but offer no basis for learners to challenge the information, and interpretations, which continue to be pushed down by the broadcast media and organizational hierarchies. Zurkowskian information banks extract data from populations while providing no real learning opportunities for them in return. These systems are based on *monologic*, rather than *dialogic* forms of information processing (cf Linell 2009).

Radical IL picks up Hamelink's early, tantalising but underdeveloped views on IL and returns to them with new theoretical lenses, developed by authors who have analysed IL in dialogic terms, particularly those working in the phenomenographic (e.g. Bruce et al 2006) and practice (e.g. Lloyd 2007) schools of IL. This paper will discuss what a dialogic form of information literacy would look like, via the work of the Russian literary theorist, Mikhail Bakhtin (1986), which is underused in IL. Bakhtin highlights the absolutely essential nature of dialogue and local context when making judgments about information, and how authority within text can be centrifugal (pushing out to the edges) but also centripetal, pulling towards single interpretations, manifested in information systems that users have no role in scrutinizing.

A radical IL would be one that redistributed authority over information practice. It would not be institutionalized in libraries or HE, but could – and must – take place anywhere there are information exchanges among peers. Radical IL is not relativist, that is, 'anything goes'; it retains a normative core, ways of judging the quality of IL teaching. But these are not measured by rubrics and standards developed specifically for IL. Instead, radical IL emerges alongside, and is part of, democratic practice within organizations and communities. Its effectiveness must be judged by the production of relevant and good quality texts, and their validation, and further development, by other communities.

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Keywords: *Authority, radical information literacy, Bakhtin, democracy, dialogic, Hamelink*

Information Literacy as a Discipline: A Contemporary Perspective

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In Johnston and Webber (2006) the authors presented the case for IL as a discipline. They referred to Becher and Trowler's (2001) indicators for disciplinarity, and identified that these indicators were present in the case of IL. For example, there are journals, associations and conferences dedicated to IL, IL is a topic for PhD study in numerous countries worldwide, and there is a self-identifying international research community. Interestingly, some of the indicators (such as having a distinctive language) are problemetised by some IL practitioners. Specifically, we identified IL as a soft-applied discipline, using Biglan's (1973) categorisation of discipline into hard or soft, and pure or applied. Characteristics of a soft-applied discipline include appreciation of research complexity, with a cumulative and iterative development of disciplinary knowledge, and debate around which are the important "next questions".

The decision by the Association of College and Research Libraries (ACRL) to revise their influential Information Literacy Standards for Higher Education (ACRL, 2000; ACRL, 2014) by identifying Threshold Concepts (TC) in IL throws a contemporary focus on the nature of IL as a discipline. TCs were introduced by Meyer and Land (2003), as part of a large-scale educational project investigating the nature of British undergraduate teaching-learning environments, and the way in which they foster thinking and practicing in the discipline. A TC is characterised as being *transformative*, *irreversible*, *integrative*, *troublesome* and potentially *bounded* (which "may in certain instances serve to constitute the demarcation between disciplinary areas, to define academic territories" (Meyers & Land, 2003; 5)

Therefore, you cannot have TCs without having a subject or discipline within which the TCs reside and are significant for teaching and learning. The TC literature chiefly consists of publications in which academics describe how they have identified TCs in their subject discipline, in order to teach their subject more effectively to students of that subject. By accepting the TC account of disciplines and disciplinary teaching, ACRL has provided further substance to the case for IL as a discipline in its own right and not simply a package of personal information skills. ACRL has amplified the status of IL as a discipline for an information society by including Mezirow's (1990; 2003) idea of transformational learning, which admits the possibility that adult learning experience can have change effects, which are epochal as well as incremental. This presentation will update our 2006 paper and elaborate our thinking on the nature of IL as a discipline and the implications for practice in the 21st Century. We will draw on our own research (e.g. Webber et al., 2006), other contemporary research into IL, and our own experience of teaching IL.

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Keywords: *Information literacy, threshold concepts, disciplinarity, transformational learning*

Collaborative Inquiry In Digital Information Environments: Expanding Perspectives on Information Literacy

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Considerable attention in the learning sciences is being given the cognitive, social and personal dynamics of collaborative learning, and how this can be nurtured and supported in rich information environments. Enabled by affordances provided by the development of collaborative information technology tools and diverse and rich information collections both print and digital, a key question for libraries centers on how collaborative learning might be supported through information literacy interventions. This paper presents selected findings and insights from current research being undertaken by the Center for International Scholarship in School Libraries (CISSL) at Rutgers University that examines the research and writing processes of high school students undertaking group research tasks in a New Jersey High school library. The purpose of this task was for students to produce a co-constructed product that represents the group's understanding of their chosen curriculum topic. The learning environment was supported by a series of information literacy interventions, and a Wiki/ Google documents digital environment that tracked the group dynamics, student-to-student interactions, resource use patterns, and knowledge building processes, as well as classroom teacher and school librarian interactions with the students, as groups and as individuals. This paper reports specifically on cognitive, personal and interpersonal dynamics reported by students as they worked in groups, and addresses a broad suite of literacy related competencies: Resource-based capabilities; Research-Inquiry capabilities; Thinking-based capabilities; Knowledge-based capabilities; Personal and interpersonal capabilities; Learning management capabilities; and Reading-to-learn capabilities.

PAPERS

Political Literacy: A Concept Closely Linked with Information Literacy and Democracy

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According to Cassel and Lo (1997), political literacy and political expertise are the same concepts. However political literacy is about political awareness. One of its objectives is citizen competence, in other words, creating well-informed citizens and preparing them for a democratic life. Definition of the term is subject to debate and ranges from basic concepts and facts that constitute necessary conditions for comprehension of political issues to the potential for informed and active political participation (Cassel & Lo, 1997).

Information Literacy Competency Standards for Higher Education addresses mainly five phases of information literacy: definition of the information need, access, evaluation, ethical and legal use and communication of information. Skills should be developed in all of these phases to create information literate individuals (Alexander, 2009). Furthermore, an information literate individual should also be able to become an informed and involved citizen in order to actively participate in his country's democratic life. According to the Citizenship Foundation (2012), political literacy must focus more on developing political ideas than just on promoting knowledge of political institutions**.** Thus, by giving young people the ability to read political issues and events critically, it would be possible to help them become politically aware and effective. Consequently, we can claim that there is a link and close relationship between information literacy and political literacy. According to Schutz (1946) and Weiner (2011), an informed and educated citizenry is essential for the functioning of a modern democratic society.

Today, with the possibilities and challenges the Internet brings along, these issues become more complex (Joint, 2005). Through the Internet, citizens can reach beyond national boundaries and can promote and participate in democracy on different levels. Additionally, opinions of outsiders can contribute to the country's democratic principles and values.

Democratic societies can be founded on information literacy, political literacy and the civic literacy skills of their citizens (Milner, 2002). Therefore, it becomes more and more important to know, to what extent individuals of a society are equipped with these essential skills for democracy. There are many studies in the literature which question information literacy levels of different age groups in different countries. However, very few have been recorded on political skills and competencies.

The aim of this paper is to find out whether there is a correlation between educational level and political competencies. With this aim, a survey will be conducted of university students in Mexico. The role of the school as an effective socialization agent will also be explored.

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Keywords: *Political literacy, political competency, civic literacy, information literacy, democratic society*

Students of Law and E-Democracy: Are They Information Literate at All?

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Purpose

The purpose of this paper is to present the findings of a small-scale pilot-study conducted among students of law at Osijek University on e-government and e-democracy information and their ability to find, evaluate, and apply that information in their studies and everyday lives. Many developed countries today have put in place e-government initiatives and ICT application for their citizens to further enhance public sector efficiencies and streamline governance systems to support sustainable development. Citizens today have diverse needs and demands for services and it is now essential for governments to exploit all possible delivery channels in order to reach out to as many people as possible. E-democracy can be defined as the use of the new ICT to increase and enhance citizens' engagement in democratic processes. In Croatia, this phenomenon was researched mostly by Croatian official information and documentation agency (HIDRA), and never in conjunction with information literacy. Students of law as a group were identified as those who are professionally directed to such information and have to be able to find, evaluate and apply it where necessary.

Design/Methodology/Approach

This paper discusses the findings of a small-scale pilot-study conducted among the students of the Faculty of Law in Osijek, Croatia. The aim of the research was to find out the degree of the students' information literacy regarding the e-government and e-democracy information. The survey was conducted in May 2014 (paper-survey) on a sample of 171 law students (69 percent of 1st year students and 31 percent of 4th year students). Students were asked about the usage of ICT technology in their study and everyday lives as well as about the ability to find, evaluate and apply the e-government information. The results of our survey detected a low interest among our sample for information related to local, regional or national governing bodies (e.g. only 3.4 percent of students used ICT to access the local communal information, 0.5 percent contacted the representative of local authority regarding administrative or communal issues). 97.7 percent of 1st year students and 69.8 percent 4th year students admit to have not used ICT technology to exercise their democratic rights. Over sixty percent (61.4) of our respondents indicated that the survey made them recognize the importance and significance of their personal engagement in e-democracy and e-government.

Originality/Value

This is the first research about the information literacy skills of law students in Croatia regarding e-democracy and e-government information. The information obtained will be used to integrate e-democracy content into the information literacy classes organized by the faculty library as well as into several of the courses taught at the Law Faculty.

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Keywords: *E-democracy, e-government, law students, information literacy, University of Osijek*

Furthering Human Rights Education through Information Literacy Instruction: Big Impact from Small Examples

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Academic librarians particularly pursue their educational role through the library's instruction programs, which typically are enacted through course-integrated instruction in which the librarian serves as guest instructor in a course. The librarian is engaging both the library's information literacy curriculum as well as the learning goals of the course. While already complex set of considerations, the examples selected for use in demonstrating information search strategies and resources can also further students' understanding of human rights. In doing so, librarians are also supporting campus learning goals related to multiculturalism, diversity, global awareness, and civic literacy.

Human Rights Education

The United Nations proclaimed the Universal Declaration of Human Rights (1948): "as a common standard of achievement for all peoples and all nations, to the end that every individual and every organ of society … shall strive by teaching and education to promote respect for these rights and freedoms and by progressive measures, national and international, to secure their universal and effective recognition and observance." The demand is not only for the respect for human rights but also that individuals and institutions have responsibility for furthering human rights and the respect thereof. Though the Declaration is lacking in specifics as to how such teaching and education will occur, that the responsibilities accrue to both individuals as well as institutions makes it clear that the responsibility is to consider human rights education in all contexts, both in formal educational systems as well as in informal teaching and learning opportunities. Admittedly this is a weighty burden, but in that weightiness is prompted a deep reflection on one's own responsibilities and the significance of what one is trying to teach. In particular, those who enjoy relatively greater respect for their own human rights might have a greater obligation to pursue their obligation to the respect for human rights and thus to human rights education. Academic librarians arguably enjoy a position of at least some professional privilege. As Maria Accardi argues, the status of faculty-librarian offers "freedom to experiment with critical instructional methods and assessment strategies" (2009).

Examples as Content

The examples used in a library's instructional programs have received almost no critical or theoretical attention in the professional literature. Yet, these examples can constitute a message about values and the importance of certain topics. Examples privilege certain ideas and bring awareness to them. Topics omitted also create "silences" that can be alienating to learners. Through intentional choice of examples, librarians can harness the potential of these teaching moments to further human rights education by integrating these issues into instructional practice. Doing so aligns the library's instructional programs with outcomes related to diversity, multiculturalism, civic literacy, etc. but also requires librarians to navigate the tensions in the profession related to the values of freedom and neutrality.

Placing Human Rights Education in Context

This paper argues that librarians should select examples that intentionally further human rights education but do so in the context of their obligations to the information literacy curriculum and the inviting professor's course content and proposes an approach for doing so. Though focused on human rights education, the argument made in this paper can be applied to diversity, inclusion, multiculturalism, global awareness, and social justice issues more generally.

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Keywords: *human rights education, information literacy, social justice, curriculum, instructional content*

IL and Information Ethics: How to Avoid Plagiarism in Scientific Papers

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Ethics is an important part of scientific communication. Not only authors, but also reviewers, editors and publishers have to be aware of all the ethical issues, and discourage any attempt of misconduct. One of the most common misconducts in science is plagiarism. It has negative consequences for authors, editors and scholarly journals causing loss of credibility, reputation, and, therefore loss of readers and finances. Information literacy, in this context, implies information evaluation, proper ways of quotation and citation of resources. Avoiding plagiarism has its roots in higher education – students have to be educated about the proper ways of using other peoples' ideas. By using modern technologies, it is easier than ever to plagiarise – the "copy-paste" practice is simple to use. Students have to be taught that this practice is a threat to proper professional and scientific communication. Plagiarism detection software can diminish the threat, but it is not the only way of controlling producers of scientific information.

Academic ethics can be assured by proper education, good codes of ethics and detailed instructions to authors of scientific papers. Accurate author's guidelines in scholarly journals could help all the participants of scientific communication to avoid misconduct. This paper will analyse the contents of author's guidelines in Croatian journals in the field of social science, with the focus on citation guidelines. The sample will include all 112 journals that cover the field, as listed on the Hrčak portal (portal of Croatian scientific journals). The analysis will try to ascertain whether the journals (i.e. their publishers and editors) mention and/or explain plagiarism, ethics, authorship, prior publication and reference systems. The paper will also analyse content of codes of ethics of Croatian universities, with the focus on the parts concerning plagiarism (universities of Zagreb, Osijek, Pula, Rijeka, Split, Zadar and Dubrovnik). A conclusion will be made about the use of proper protection mechanisms in the Croatian academic community when it comes to misconducts in science, especially plagiarism. Recommendations for universities and publishers on what to include in their codes of ethics and instructions to authors will be given**.**

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Keywords: *Croatia, ethics, plagiarism, scientific communication, scientific journals*

Archival Literacy: Different Users, Different Information Needs, Behaviour and Skills

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We present a study about different types of archival users. Johnson (2008) was one of the first who dealt with this issue. Šauperl, Vilar, Sabotić & Semlič Rajh (2014) extend this debate by presenting two hypothetical user types: lay and an expert. This perspective is also seen in some other fields, e.g. health information (Higgins et. al, 2011). Our definition of user types, based on Cifter and Dong (2009): lay users are persons who have not received the training/socialization into a particular profession (this group further divides into experienced and novice); professional users act within the formal part of a profession, having good knowledge of the task, being trained and usually having experience with it and deep understanding of its context. Experienced lay users may have previous experience with the task, but limited background knowledge; novice lay users are new to the task, lacking the knowledge and training to perform it well. This view can be applied to library and archival contexts; in this perspective the two user types, introduced by Šauperl et al. (2014), represent the subtypes of the 'lay' category. We extend this approach to deal with differences between information skills of the basic two user types (lay/professional), employing Blundell's (2013, p. 1) definition of archival literacy: "a combination of the basic "find, use, incorporate" approach and the navigation and specialized instruction typically experienced in an archive". Since archivests have been trying to enhance their collections' accessibility by going digital, thus no longer being used only by archivists, it has become evident that this requires a change in lay users' information skills (Daniels & Yakel, 2010). Adapted from LIS context, we could assume that professionals possess the "ideal/perfectionist" information skills, while lay users use the "common-sense/survival" approach. The problem of accessibility of archives may be tackled: a) with archival metadata, as indicated by Šauperl et al. (2014); b) with database design. Current findings (e.g. Daniels & Yakel, 2010) do not indicate many differences between users of digital archives and other digital libraries. Related to information skills, the basic question is how aware are archivists of the differences between types of users who are likely to use their (online) publicly accessible collections and how much thought has gone into their information needs, behaviour and skills.

Within this broad context we see several issues; only a few will be tackled in this study: What types of users may be expected in contemporary archives? What skills should different users possess to be able to use archives effectively and efficiently? Do these skills differ from "usual" information literacy skills; if yes, how? How can findings from LIS (particularly IL) help in this context?

These questions will be the content of an interview with a purposive sample of archivists and LIS experts, coming from both practice and teaching. The context of the study is regional archives in two countries, Slovenia and Bosnia and Herzegovina. The answers will be content-analysed. We need to note that the analysis had not yet been done when the abstract was submitted, but will be done by the time of the conference. The results will provide valuable insight into the above issues, further guiding the thinking about archival practice, as well as education and training of both, archival professionals and users of archives.

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Keywords: archives, archivists, users, competences, information literacy, archival literacy, Slovenia, Bosnia and Herzegovina, BIH

Copyright Literacy of Librarians in France

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In recent times, we observed events in France dealing with copyright in libraries that would not have been possible in the past. For example the Act No. 2012-287, voted on 1st March 2012, by which the French government created legal tools for digital use of 20th century out-of-print books. With this law, the French national Library (BnF) has the right to digitize books without negotiating each publishing contract case by case[1]. Some librarians, within the context of "cities on common"[2], are organizing "copy parties" where patrons can come to the library and scan books for "private use". Due to the complexity of this field in everyday life and the new challenges correlated to the digital world, are French librarians ready to raise the issues related to copyright, like the digitization challenges and the introduction of digital documents in libraries? Is their background, including training and formal education, adequate enough to deal with changes affecting this field? Are they aware of international initiatives on copyright issues, or are they only focused at the national level? In this paper we aim to produce comprehensive knowledge about the copyright literacy of French librarians, considering that this kind of study has never been done in France.

To be able to answer those questions, we conducted a web-based survey adapted from an international research project called "Copyright Policies of Libraries and Other Cultural Institutions" (2012-2014)[3] between 27th January and 31st February 2014. The questionnaire has been sent by mail to more than 500 heads of academic libraries, around 300 library Facebook accounts, and three professional mailing lists. The receivers were asked to complete and distribute it to their colleagues. This approach enabled us to collect 329 completed answers, which show that more than 70% of the respondents are aware of the basics of copyright. However, most are unfamiliar with clearing rights, fair use, international laws, as well as issues on institutional repositories or virtual services. To understand the reasons of this weakness we will examine the curricula, when available, in the LIS schools and the relevant bodies which train librarians.

It is crucial, in this changing world characterized by the digital age, to be aware of the knowledge, skills and competence of librarians in this field. The results will help to enhance the LIS and lifelong learning curricula.

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Keywords: *Copyright literacy, France, libraries, LIS studies*

[1] For more information, please consult the "Registre des livres indisponibles en réédition électronique" [Register of unavailable books in electronic reissue], http://relire.bnf.fr

[2] Villes en biens communs [Cities on commons], http://villes.bienscommuns.org/

[3] This project was financed by NSF of the Bulgarian Ministry of Education, Youth and Science, Contract № DFNI-K01/0002-21.11.2012 and headed by Tania Todorova from State University of Library Studies and Information Technologies, Sofia.

A Multinational Study on Copyright Literacy Competencies of LIS Professionals

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As a result of recent improvements in technology and devices for communication, changes in formats of information, and trends such as consortium collection development, open access and digitization, today's information professionals face increasing and more complicated intellectual property and copyright issues than in the past. Thus developing high level copyright competencies/skills become essential. Having known the necessity of "copyright literacy skills", one can pose a question on whether or not Library and Information Science (LIS) professionals are equipped with these essential skills.

The main aim of this study is to investigate actual copyright literacy levels of LIS professional. With this aim a multi-national survey including Bulgaria, Croatia, France and Turkey was conducted[4]. An online survey instrument was developed by the authors in order to collect data from professionals who work in cultural institutions such as libraries, archives and museums regarding their familiarity, awareness, experience and opinions on copyright related issues. Each participant translated the original survey into their own languages with an effort to keep meaning and the intent of the original survey. Methods of sampling varied in each country. Convenient sampling is mostly used. Researchers tried to reach as many LIS professionals from different cultural institutions as possible, through professional discussions lists and personal contact, to be able to draw meaningful conclusions. The survey garnered a total of 622 complete responses (148 from Bulgaria, 82 from Croatia, 311 from France and 81 from Turkey).

In this paper, following research questions will be explored:

- to what extent LIS professionals are familiar with copyright related issues;
- to what extent they are aware of copyright policies within their institutions and their countries;
- what their opinions and needs are in regard with the inclusion of copyright related issues in LIS education.

Commonalities and differences among institutions and participating countries will also be explored. Findings of this study are expected to highlight gaps in copyright literacy competencies of LIS professionals and in LIS education. Findings will be used to draw recommendations to increase the efficiency of LIS education and professional associations to equip LIS professionals with copyright literacy competencies. The findings and conclusions are expected to further help the LIS education community, experts of professional associations, managers and other specialists from cultural heritage institutions to manage and meet copyright related challenges and trends which will play a key role in shaping the future of the profession.

Keywords: *LIS education, information literacy, copyright, Bulgaria, Croatia, France, Turkey*

[4] This study is a part of "Copyright Policy of Libraries and Other Cultural Institutions" multi-national project (2012-2014), financed by National Science Fund of the Bulgarian Ministry of Education and Science, Contract № DFNI-K01/0002-21.11.2012.

Measuring Information and Digital Literacy Activities through Learning Record Store Repository of the National Training Centre for Continuing Education for Librarians in Croatia

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The aim of this paper is to present the findings of a quantitative analysis of the learning record data stored in the learning repository of the Croatian Training Centre for continuing education of librarians. The research aim is to measure the information, digital and media literacy activities of librarians in the national lifelong learning programme, and to analyse application of an experience API (xAPI) as an information and digital literacy assessment instrument. The introductory overview of theories provides an umbrella framework for overlapping terms such as digital literacy, information literacy, media literacy and digital competences. Convergence or overlap of terms largely depends on the prospective aim of the assessment process, which could be regarded as normative/pedagogical or instrumental/technical in nature (Gapski, 2007; Pietrass, 2007).

The research methodology consists of quantitative analysis of user activity logs recorded by the Croatian Training Center web portal (http://cssu.nsk.hr/). This web portal is based on the WordPress content management system, integrating social media services such as learning portal personalization, content rankings and commenting, opinion pools, Facebook and Twitter sharing, event bookings and learning calendar planning, etc. User activities made through this social learning portal are recorded and stored in the form of statements, expressing users' learning experiences and digital competences. To analyze digital competences an ADL (Advanced Distributed Learning) experience API (xAPI) and learning record store (http://lrs.nsk.hr:8000/) have been implemented. Learning record store is a system where certain user activities are stored in the format of semantic statements (actor-verb-object), expressing that "learner has been there" or "did that", etc. To overcome a merely instrumental or technical assessment approach, special attention is given to analysis of user activities within its cognitive and reflective practice, like "agree", "like", "dislike" etc.

Formal assessment tools for measuring learning outcomes, such as tests or exams, have been found inconvenient in the case of the national continuing professional development program, especially in regard to the non-compulsory aspect of the program and the lack of any learning management system in use (Machala & Horvat, 2010).

The results of the quantitative analysis of stored learning record data refers to prospective indicators of information and digital literacy of librarians in a lifelong learning program, as its correlation to a national professional competency framework. The paper presents a case study of experience with API implementation and its use as an information literacy assessment instrument.

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Keywords: *Information and digital literacy, learning record store, continuing professional development, assessment*

Synergy of Managerial Competences in Academic Libraries and Information Literacy of Library Users

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Purpose

The competence profile required for academic libraries is based on different types and levels of competences necessary for their managers and librarians to complete various and complex tasks put in front of them by users and social community. The demands made by users are directed at obtaining/providing the highest quality of services in libraries, and can be met if the level of competences found in library managers and all employed librarians is adequate. Users expect their libraries to keep up with the ongoing changes and therefore it can be said that libraries emerge as a place of continuous learning.

The aim of this paper is to explore which competences library managers, as competent professionals, find the most important for information literacy of library users.

Design/Methodology/Approach

The paper focuses on the competences which librarians working in academic libraries must possess in order to provide the adequate service. A new competence profile which is required from the managers of academic libraries is presented and elaborated, and special attention is given to the role that library managers play in the process of promoting information literacy among library users.

Since recently, the need to increase users' information literacy skills and the competences that users acquire through the implementation of the information literacy programs have been widely discussed, however, there is not enough research on the competences of library managers as coordinators of these programs. The participants of the study are academic managerial librarians working in Eastern Europe. The Delphi method is employed in order to determine current and predict future levels of knowledge, skills and personal abilities demanded from librarians so that academic libraries can successfully cater for the needs of their users in the 21st century.

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Keywords: *Delphi method, information literacy, librarian competences, academic libraries, library managers*

Information Literacy in Brazil

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Introduction

Information literacy is a fundamental factor in human development, organizational development and national development. Its mission is to create individuals capable of using strategies for lifelong learning. Belluzzo introduced the official meaning of the term information literacy in Brazil as "competência em informação" and produced much research about information literacy. According to Belluzzo (2006) information literacy consists of two dimensions, first the domain of abilities that facilitates the practice, and second the critical vision of the activities and responsibilitiesto address social problems.

The Brazilian government is focused on economy, and thus national education is on the back burner receiving less financial resources; and this fact increases educational problems. Public teaching has problems such as lack of financial capital, politics that don't value the public interest, and a reduction of the importance of reading and learning processes (Lecardelli & Prado, 2006). Economic development is valorized as the basis for information literacy; however we must consider other factors such as human and social development as the outcome of building knowledge.

Objectives

This paper investigates how information literacy is treated in Brazil by means of an in-depth literature review about this topic and discusses the current situation regarding citizen education. It also contrasts the theoretical assumptions underpinning Brazilian literature within the politics of the country. The article contributes to the amplification of that topic and it argues for the building and dissemination of knowledge around country.

Methodology

The methodology of the article is based on a bibliographical review of the manner in which information literacy is treated in the politics of Brazil. Firstly, we review books, articles published in magazines, theses, and dissertations about Information Science in Brazil. Next, there is a description of the historical and theoretical aspects of information literacy studies in the country with a discussion of the current situation of information literacy in government policies. It is emphasized that this approach is still new in this country, so this approach needs an in-depth literature review to serve as a basis for future practical observations.

Outcomes

It is observed that the government has a responsibility to implement public programs to encourage information literacy around the nation, so there are a lot of different programmes in Brazil. But the country still needs more efforts in the implementation of information literacy strategies to improve education.

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***Keywords**: Information Literacy, Learning, Nation development*

The School Library as a Promoter of Multimedia Literacy in Primary Education in Croatia

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The aim of this paper is to reveal the opportunities and the role of school libraries in the adoption of multimedia literacy in elementary education in Croatia. The need for multimedia literacy is a phenomenon causing changes in the roles of educational institutions, schools and libraries. Computer literacy, which is nowadays taught in primary schools, represents the ability to use computers and understand the tools that allow the user to interact with the technology (Lynch, 1998), while multimedia literacy commonly gets associated with the ability to understand the content presented in a combination of different media (Mayer, 2001). Today's students are used to the continuous availability of information and their most developed skill is multitasking. Teaching methods prevailing in the modern school system aim to make pupils active participants in the learning process and contribute to the development of the above mentioned skill. This leads to pupils performing their own multimedia research, and their search for information begins in the school library.

The school library as a multimedia center of every school and the role of the school librarian as a promoter of multimedia literacy are becoming vital for the teaching class as well as for extracurricular activities, regardless of the content or the subject (Alman et al, 2012). A school librarian can explore tools that might simply and effectively be used in teaching/learning and present them to both teachers and pupils. With all multimedia tools available, teachers and pupils are able to establish parallels with the traditional paper based medium. For example, in the school library of elementary school Dubovac (Karlovac, Croatia), pupils who participated in projects "Digital collection of students picturebooks", "Fairy Tales - sources of multiculturalism" and "Literacy for the 21st Century" were engaged in the design of multimedia posters and multimedia books and could make comparison with paper posters and printed picture books. Pupils' existing skills facilitate the mastery of new media and enable them to move quickly to exploring new possibilities offered by new tools. They can combine text, images, audio and video (along with numerous effects), but they need to make their own decisions about which media are appropriate for their specific learning task and learn how to integrate the information coming from multiple sources and in different formats (Mikelić Preradović et al, 2014). Finally, active involvement of pupils as collaborative creators rather than consumers helps them to develop multimedia literacy in an easy way because they are given the opportunity to explore, choose and discover the learning tools in their own way.

This paper will present the results of collaboration on multimedia projects between school librarian and pupils from elementary school "Dubovac" and demonstrate a way in which library can become a place where pupils can learn not only how to combine different media, but also to critically use and evaluate each medium.

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Keywords: *School Library, Multimedia Literacy, Primary Education, Croatia*

I-LEARN: Helping Young Children Become Information Literate

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This study involved 27 five- and six-year-old students and 24 seven- and eight-year-old students along with 4 of their teachers in the design, development, and evaluation of a research project built around the I-LEARN model (Neuman, 2011). The objectives of the study were to both to improve the technology and information literacies of the participants and to validate the I-LEARN model in practice. Methods included both quantitative and qualitative approaches, and the findings relate to three areas: teachers, students, and technological/pedagogical knowledge.

A team of researchers from Drexel University worked with an economically disadvantaged public school that has a partnership with the University on a project designed to introduce the teachers to the I-LEARN framework, to train the teachers to use free Internet tools for designing research projects, and to offer in-class support to students as they worked on their research projects. For each project, a child created a digital portfolio about "what makes Philadelphia special." Teacher training was guided by the results of a TPACK survey about each teacher's "technological pedagogical content knowledge" (Koehler & Mishra, 2009). During this training teachers were introduced to several potential platforms for students' projects, and they settled on two: Weebly (http://www.weebly.com/#) and Little Bird Tales (https://www.littlebirdtales.com/). Over the three months of the project (April-June 2013), research team members assisted students and teachers in brainstorming ideas, conducting information searches, evaluating and using the information critically and effectively, and uploading students' work to their digital portfolios.

Ultimately, portfolios were collected for 49 students from two classes, one teacher's assessments were obtained for 25 students, and self-assessments were obtained for 24 of these 25. These data as well as the transcript from a focus-group interview with all 4 teachers provide the primary data set for analysis. Preliminary analysis revealed that teachers developed their own approaches to the assignment, adjusting their implementation of I-LEARN's steps to meet their particular students' needs and to mesh with their own styles. They appreciated the model as a tool that enhanced their own as well as their students' understanding of the research process. Students, too, were able to build new knowledge through the project and enjoyed learning a variety of ways to acquire information. The model made the idea of research more concrete and less abstract for them and helped them focus on specific tasks and accomplishments. Teachers' technological/pedagogical knowledge also grew during the process, and all the teachers in the focus group were eager to replicate the experience in the future. They concluded that the projects overall were a success and that they and the students were able to overcome students' lack of computer experience and typing skills to focus on finding and analyzing sources and reflecting on what they had learned.

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Keywords: I-LEARN, TPACK, technological pedagogical content knowledge, information literacy, learning

Mapping Educational Standards to the Big6

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Information literacy is arguably the 21st century skill, and as such, it is important for students to have a solid grounding in information problem solving, which is the application of information literacy skills (Partnership for 21st century skills, 2009). Many authorities have called for these skills to be incorporated into educational standards in the United States, Europe and indeed world wide. This paper primarily compares the American Association of School Librarians (AASL) standards (American Association of School Librarians, 2009) to the Big6 model of information problem solving (Eisenberg & Berkowitz, 1990) to determine the extent these standards engage all aspects of the information problem solving. Additionally, this paper seeks to influence the educational reform movement to explicitly include all stages of the information problem solving process in educational standards.

Objectives

The following questions were addressed:

1) To what extent are the stages of the information problem-solving process, as described by the Big6, reflected in educational standards, primarily the AASL standards?

2) How are skills related to the Big6 stages of Task Definition and Evaluation reflected in the AASL standards?

This paper briefly examines how the AASL standards compare to other sets of standards and to what extent these standards have aspects not covered by the Big6. The comparison is primarily with the Common Core State Standards (CCSS) (National Governors Association & Council of Chief State School Officers, 2012), but also examines other standards including those of higher education organizations. Standards compared include those from the Association of College and Research Libraries (ACRL) and Seven Pillars of Information Literacy of the Society of College, National, and University Libraries (SCONUL).

Methodology

An exploratory content analysis was conducted utilizing five analysts to examine standards from both the AASL and the CCSS. The initial content analysis compared 377 CCSS and 313 ALA standards statements from grades 2, 5, and 8 to the stages of the Big6. A total of 325 standards statements were found to fit the Big6. Results of the content analysis were then compared to standards from the ACRL and SCONUL.

Outcomes

The AASL and the CCSS were heavily weighted to Big6 stage 5, Synthesis. The AASL standards included statements in all six Big6 stages. The CCSS standards were heavily weighted to the Synthesis stage (stage 5 of the Big6) and omitted stage 1 Task Definition, stage 2, Information Seeking Strategies, and stage 6 Evaluation. The ACRL and SCONUL have new frameworks incorporating both task definition and evaluation.

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Keywords: *Educational standards, Information problem solving, Big6, Common Core State Standards, Learning*

Emerging New Information Literacies – A Conceptual Outlook

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Introduction and Goals

Visioning the future, Ridley (2011) defines post-literacy "*as the state in which reading and writing are no longer a dominant means of communication"*, while Kress (2003) was talking about visual objects instead of letters and screens instead of books. However, the common nature of these information activities is invariant: visual representation as information input, and objectivation (exformation) as information output. Therefore, we have to concentrate to the transforming social practice: the crucial moments are the changing patterns and structure of everyday life. We are aiming to call in three new sets of literacies into the discourse, the newborn, the transitional and hyperpeople literacies. We hope that the proposed conceptual framework can vivify and quicken not only the literacy debates, but raise awareness and stimulate design of new intellectual, educative and work environments and pedagogy/training practices.

Transitional Literacies

The first group of emerging literacies are improved versions of their existing predecessors. We are going to elaborate the characteristics of the transition and the core features of the next generation literacy-like skills.

Current forms		**Next generation needs**
English fluency	➔	English as a universal second language (Eaton, 2010)
Visuacy		(Info)graphicacy (Aldrich and Sheppard, 2000)
Data literacy		(Big) data literacy, analytic skills
Participacy		Agenda setting competency, operacy
Scientific literacy		Lifelong research (Z. Karvalics, 2013)

Hyperpeople Literacies

The overall frame of the next decades can be the "Internet of Everything", as a complex symbolic and transactional environment. Its average online citizen, the "hyperpeople" will be characterized by new interaction patterns (including special semantics on the Human part with new kinds of Personal Digital Assistants), under the shadow of re-designed interfaces, tools and background systems (including hardware, software, orgware elements). Since there will always be brains at the end of value-chains, the keyword of building new literacies is "human technology".

Social Innovation, Design Thinking

Paraphrasing the famous sentences of Alan Kay, the best way to be ready for the future is to build it. The "agenda of further thinking" (Kress, 2003), the teleology of information literacy has to include the elements of collective design.

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Keywords*: Post-literacy, visuacy, graphicacy, participacy, operacy, scientific literacy, lifelong research, personal digital assistant*

The Personal Knowledge Base Conception of Information Literacy

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Introduction

Most authors on information literacy agree that the concept refers to a person's broad ability to use information from different resources, which includes a set of sub-skills. Although most of the authors do not really differ in their definitions of the information literacy concept, phenomenographic research makes clear that in the context of education there can be distinguished at least two different conceptions of the phenomenon: an "information problem solving" conception and a "personal knowledge base" conception (Van Helvoort, 2010, p. 63).

The conception of "information problem solving" has been elaborated in different models by many researchers but the "personal knowledge base" conception has, until now, remained unfilled in LIS research. In my paper I will propose the main concepts to make the idea of a "personal knowledge base" more concrete.

Methodology

The content that is proposed for the concept of a "personal knowledge base" has been derived from educational research papers, more particularly those on the "developments of complex cognitive skills" (a.o. Van Merriënboer, Clark & De Croock, 2002) and those on the "acquisition of meta-cognitive knowledge" (Alexander, Schallert & Hare, 1991; Pintrich, 2002).

Conclusions

Based on the educational literature a model for the content of a "personal knowledge base" will be proposed where two kinds of internalized knowledge are distinguished: the body of knowledge of the discipline and metacognitive knowledge. Both elements display sub-content, which is expressed in figure 1.

Relevance

This conception of information literacy as a "personal knowledge base" is consistent with the idea that "learning to learn" is one of the main goals of Higher Education. The more concrete interpretation of it suggests two new research questions:

- How do Information Problem Solving and the construction of Personal Knowledge interact?
- How can the personal knowledge of students be measured or assessed?

The researcher's suggestion is that these questions should be investigated by education researchers rather than by information scientists.

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Keywords: *information literacy, information problem solving, personal knowledge base, metacognitive knowledge*

Can an Information Literacy Teaching Intervention Promote Self-efficacy in Learners?

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Introduction

Many authors have identified self-efficacy as a key outcome of information literacy (IL) teaching interventions (e.g., Kumar & Edwards, 2013). Self-efficacy is 'the conviction that one can successfully execute the behaviour required to produce the outcomes' (Bandura 1977, p193). Kurbanoglu et al (2006) noted the link between self-efficacy, IL and ways of measuring this. Characteristics of self-efficacy relate to IL in that it is context specific (Bandura, 2006) and individuals can show differing levels of self-efficacy between tasks e.g., a learner may exhibit high self-efficacy when evaluating a newspaper article, but lower self-efficacy when evaluating scholarly journals. This paper seeks to demonstrate that an embedded IL literacy intervention can enhance students' perceptions of their own self-efficacy. Its focus is the 'Step-Up to HE' programme, a short study skills course delivered at a UK university. Its objective is to enhance participants' self-efficacy, especially those who lack confidence but, nevertheless, want to give studying at university a try. The 12 week programme contains a 3 week intervention based on Walton & Cleland's (2013) IL framework of finding, making judgments about and using information for an assignment.

Hypothesis

Participants (n=40) will gain a statistically significantly higher score in the self-efficacy post-IL intervention test than in the pre-intervention test.

Methodology

This is a quantitative approach using pre and post intervention questionnaires to determine changes in self-efficacy. Questionnaire design follows Bandura (2006) in the selection of 'general' self-efficacy questions e.g., 'It is easy for me to stick to my aims and accomplish my goals'. Specific information literacy self-efficacy questions (acknowledging Kurbanoglu et al, 2006) were added by the author such as, 'I can make sound judgments about information when evaluating it for its quality'. To gain as nuanced a result as possible, participants rated themselves between 0 and 100 for each question. Differences in question scores were statistically analysed using a Sign Test.

Results

There were no statistically significant results for the 'general' self-efficacy scores. However, there were wide variations in 'specific' information literacy self-efficacy scores. Participants scored statistically significantly higher in post-intervention question scores than in pre-intervention scores $p<0.05$ (n=40). These results are promising but it is open to debate whether the hypothesis can be fully upheld, further testing is required to determine replicability.

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Keywords: *Information literacy, self-efficacy, widening participation, non-traditional students*

Evidence-based Learning Approach in Evaluation of Information Literacy Education

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The primary goal of our contribution is to stress the necessity of including cyclic or continual research methods in information literacy (IL) education. The distinctive character of recent IL education seems to be specialization in a wide range of study areas, so, it is obvious, that the quality of empiric data is a precondition for building student-centred lessons. Evidence-based learning (as a general attitude) in evaluation of IL education leads to more effective educational aims (Davies, 1999). The various model approaches to thinking about the effectiveness of IL education are presented. We focus on the Kirkpatrick's Four-Level Model which corresponds with our aim to strengthen students' satisfaction and learning results (Kirkpatrick & Kirkpatrick, 2007). Practical experience with conducting research according to this approach is presented in detail.

The first measuring level tries to evaluate immediate students' reactions to an educational activity (a seminar, a workshop, a module in e-learning etc.). We assessed students' satisfaction with the study environment, study content and the lecturer. In accordance with the research methods of the first Kirkpatrick Level we used short paper questionnaires (so called smile-sheets). The purpose of the survey was to identify organizational and content problems. The second Kirkpatrick Level explores change in knowledge and skills due to educational activity (Kirkpatrick & Kirkpatrick, 2007). In order to map knowledge progress in the information literacy e-learning course, we assigned a pre-test and a post-test. Another method was a didactic test which served to compare the knowledge of both LIS students and librarians who took part in lessons on information safety. The subject of the third Level of the Kirkpatrick's model is to identify the long term change in participants' behaviour with the benefit of hindsight (e.g. six months after the lesson) (Kirkpatrick, 2007). The qualitative methodology used in the survey consisted of focus groups series which aimed at the ability and willingness of the students to utilize the acquired knowledge and skills effectively. The next method was 360° feedback realized in the form of six interviews. The fourth Level shows the tangible results of the programme and is accepted mainly in the commercial sphere because it is focused on the return on educational investment. This Level was not utilized, and therefore is presented only theoretically.

An evidence-based approach in the field of IL education provides constant feedback of ongoing education to the lecturer, supplies valuable data revealing the effectiveness of individual forms of IL education, and helps to predict the course of further education activities. Our contribution stresses positives from the application of Kirkpatrick's model to designing effective IL education. It is important for the results of the measurement to be thoroughly analysed and presented so they can serve as a foundation for further development.

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Keywords: *Evidence-based learning, information literacy effectiveness, Kirkpatrick's Four-Level Model, research*

Assessing IL Skills of Primary-5 Students in Singapore

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Information literacy has received a great amount of attention in the academic field since 1974 when the term was first coined by Zurkowski; however, as some researchers have pointed out, students often lack information skills to take advantage of rich information sources offered by school libraries such as electronic databases, online catalogues, websites and multimedia. Recognized as one of the most successful in the world, the Singapore education system has been evolving constantly over the years. As the country developed, the earlier efficiency-driven system has been replaced with ability-driven education (ADE) paradigm, in which creative thinking and learning skills are identified as important assets. However, most of the past efforts were focused on high school level and above. More recently, in the Teacher Education Model for the 21st Century, abbreviated as the TE21 Model, published in 2009, information literacy skills were recognized among other 21st century skill sets to be taught to students from younger age. In 2010, several information literacy components were incorporated into textbooks of various subjects. Knowing where students stand today for their IL skills will be instrumental in assessing the impact of new curriculum as well as guiding future plan in teaching content and pedagogy. This paper will report on the survey results of Singapore Primary 5 students' Information Literacy skills.

The study was done at the end of 2013 with collaborative efforts from a group of IL researchers, members of Singapore National Library Board, and child development experts in the Ministry of Education. Some 3435 students from 15 schools, spread across different geographical regions of Singapore, were sampled. Due to the young ages of the students, a paper-based survey questionnaire was used to collect data. Along with four items for demographic information, the questionnaire contained 24 IL related questions and was constructed with consideration of the IL related concepts taught in school, Singapore's multi-cultural context, and Primary 5 students' reading proficiency. The questions were divided into six categories, with the number of questions raged from two to ten in each category. The six categories were Defining Information Task, Selecting Information Source, Seeking Information from Source, Synthesizing and Using Information, Appraising the Information Process and Product, and Cyber Wellness. Results of data analysis showed a mean percentage score of 64, meaning that students possessed basic IL skills. Students scored very well on cyber wellness questions, defining information task, synthesizing and using information. However, students performed poorly for questions related to seeking information from different sources. It was also observed that students did not do well at identifying steps in conducting an information project. The results suggest that most of the P5 students might not have been given enough opportunities to carry out independent tasks that required them to find new information, or information may often be given to the students by teachers. Students in general possess a satisfactory amount of the expected IL skills at this grade level. However, it was surprising to see that many were unable to understand information from simple graphics, such as a pie chart. More discussions are included in the paper.

Keywords: *Information literacy, survey, grade-5, assessment*

Assessing Information Literacy – Creating Generic Indicators and Target Group-Specific Questionnaires

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Introduction

Assessing information literacy can be useful to determine the learning process of students or to identify strengths and weaknesses of information literacy instruction programs. Also schools, countries or different social layers can be examined and compared in terms of information literacy (Grassian & Kaplowitz, 2001). The goal of this study was to find out which skills in terms of information literacy are needed in the 21st century and how those skills can be tested. So this paper deals with the construction of five different questionnaires for pupils (7th and 10th grade), university students, teachers and scientists to test their knowledge in information literacy. For this purpose the department of information science at the Heinrich Heine University in Düsseldorf developed a list of indicators as a base for the questionnaires. The project is in the process of pretesting, so no final results can be presented here.

Indicators

For the concept of information literacy different definitions can be identified in the literature. The American Library Association defined skills such as the identification of information needs and the ability to locate, evaluate, and use information (American Library Association, 1989). In the last few years, new skills like the (collaborative) creation and indexing of information or the responsible use of information came into the center of attention. The standards of ALA have been reworded and extended to create a comprehensive list of 64 skills that form the basis of the questionnaires. These indicators have been divided into seven areas of competence:

1. Identifying information need
2. Searching and finding information
3. Evaluating information
4. Using information
5. Organizing Information
6. Communicating and publishing information
7. Responsible handling of information.

Questionnaires

To test the indicators, five multiple choice questionnaires have been developed for pupils (7th and 10th grade), university students, teachers and scientists. Those questionnaires differ in terms of difficulty and certain topics. The method of multiple choice tests was chosen because of the high objectivity and the possibility to assess many test subjects in a short time and with little effort.

Despite the carefully selected test method some weaknesses of the questionnaires were revealed. So, for example, it is only possible to assess factual knowledge, but not to test a particular performance that can be difficult while testing certain areas like using information or responsible handling of information.

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Keywords: *Information literacy, questionnaire, assessing information literacy, information literacy standards*

Piloting a Holistic Information Culture Program: The Experience of CETYS Universidad System of Libraries

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This article presents the objectives, structure, methods and preliminary results of a holistic information literacy program being developed within the System of Libraries of the three-campus CETYS Universidad in Mexico. In 2013, the institution hired two highly qualified international librarians. These librarians were initially appointed as reference librarians, but later renamed as Information and Learning Development Librarians (ILDL) due to their more comprehensive roles. As this was an innovative decision, the reasoning behind the renaming is provided. From this recent organizational evolution of the libraries, the Program 'Information Culture Development' (ICD) was created by the ILDL, who are responsible for its development and execution. ICD's holistic view was built and defined after diagnostic interviews were conducted among academics. Furthermore, it is driven by action research (AR) and the concept of information culture, which is grounded in contemporary research literature and considered to be comprised of information literacy, and digital literacy, together with writing, communication, and research skills. Thus, ICD aims at addressing information and digital literacy tasks, as well as provoking and supporting reflection and improvement upon other university practices related to curriculum, teaching, and research. Accordingly, ICD's objectives were stated in order to address all university stakeholders, as well as these methodological and conceptual stances. ICD's initiatives, products and resources were divided into four axes: a) curriculum and learning support, b) information and digital literacies development, c) research and scientific communication support, and d) the transversal axis of evaluation and communication of results. All but axis d include the development of courses and video tutorials for students, academics and university staff. This article includes some insights into the methods, results and experiences from the pilot of ICD. The pilot was conducted through numerous workshops with students and academics in two of CETYS campuses and involved different activities framed within an AR perspective using a mixed methods approach. The data collection methods used were diagnostic and follow-up questionnaires, and use of screen capturing software to gather videos from the participants in the workshops. Preliminary results determine the success of activities with these academics, and their strengths and weaknesses regarding research and scientific communication competencies.

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Keywords: *Information literacy, digital literacy, information culture, institutional information literacy programs, higher education, CETYS Universidad, Mexico*

The Ball is in Your Court: Information Literacy Self-efficacy and Information Literacy Competence Relation

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The main aim of this paper is to determine the relation of the student information literacy self-efficacy and actual information literacy competence. The survey encompassed 300 future pedagogues, students majoring in pedagogy at two universities in Croatia (University of Zagreb and University of Split). Information literacy of the preservice teachers is a widely researched topic due to the importance of their information literacy related competencies for their studies and future work. The earlier research indicates that the majority of the current primary teacher education programs in Croatia include goals that could be linked to information literacy standards (Batarelo Kokić, 2012). Self-efficacy is a highly effective predictor of students' motivation and learning and students' academic achievement mediator (Zimmerman, 2000). Several research studies focused on determining information literacy self-efficacy among students in higher education (Demiralay & Karadenız, 2010; Kurbanoglu, Akkoyunlu & Umay, 2006). Furthermore, in several research studies there was a focus on testing students' information literacy competence (Beile, 2005; Neely, 2006). Nevertheless, there are few research studies that compare student perceived information literacy self-efficacy and information literacy competence related to specific research areas (De Meulemeester, 2013; De Meulemeester, De Sutter & Verhaaren, 2012). The information literacy self-efficacy (ILSE) scale developed by Kurbanoglu, Akkoyunlu and Umay (2006) stressed the impact of information literacy on many aspects of life and in particular on lifelong learning, which is constituted by key skills such as self-regulated learning and information literacy. The ILSE scale that was translated in Croatian for purpose of this study was revised through both exploratory and confirmatory factor analysis. The information literacy competence assessment scale items were compiled to fit the information literacy standard for higher education (American Library Association, 2000). Information Literacy Assessment Scale (ILAS) for education (Beile, 2005) was used as a frame for the information literacy competence assessment scale development. The ILAS scale items were adjusted to fit cultural and linguistic differences of students in Croatia. The results of the statistical correlation indicate relationship between results on the information literacy self-efficacy scale and information literacy competence assessment scale.

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Keywords: *Information literacy self-efficacy, information literacy competence, pre-service teachers*

Applying threshold concepts to information literacy and STEM education

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As ACRL redevelops its framework for information literacy (IL) at the undergraduate university level, the idea of threshold concepts has become a key approach for IL instruction. Threshold concepts have been discussed in the educational literature since Meyer and Land's seminal work (2003); they are relatively recent arrivals in the library context. They are defined as ideas that are clear to experts but cause roadblocks for novices; their key attributes are that they are transformative, integrative, irreversible, bounded and troublesome (Townsend, Brunetti, & Hofer, 2011). In IL they have been positioned as bounded in and derived from the discipline of information science, making them generalizable to students across the disciplines (Townsend et al., 2011). The current draft Framework for Information Literacy for Higher Education lists six major threshold concepts: scholarship is a conversation, research as inquiry, format as process, authority is constructed and contextual, searching as exploration and information has value, (ACRL Information Literacy Competency Standards for Higher Education Task Force, 2014). These concepts are broadly applicable, but they must be contextualized within specific knowledge communities.

While IL skills are rooted in the same concepts across disciplines, they are applied and presented differently within them. Applying threshold concepts in the disciplines requires attention to these differences. I will explore the existing literature on threshold concepts and advocate for contextualizing threshold concepts for IL in science, technology, engineering, and math (STEM) fields.

First, it is essential to explore information literacy threshold concepts within the disciplines in order for librarians to deploy these broad threshold concepts in meaningful and effective ways. Research shows that contextualized instruction "connects learning targets to practical needs," and promotes learning (Booth, 2011, p. 55).. Next, conceptualizing threshold concepts within the disciplines helps students understand their nuances. Many of the concepts seem deceptively simple in STEM.The context of authority appears clear in STEM: peer-reviewed experimental research. But as more and more research has been found to be unreproducible, this authority is complicated. Student in STEM need to understand the complexities underlying a seemingly simple answer.

Finally, it is important for IL threshold concepts to be explored within disciplines because students find transferring even fundamental concepts between contexts challenging, (Nowacek, 2011). Thus, an explicit discussion of threshold concepts in the context of the discipline students are familiar with sets the stage for metacognition and better transferability and consequently more student success. This will cement IL into skills for life-long learning, and, in the case of STEM fields, will help learners develop and maintain scientific literacy. Ultimately, even the broad, flexible threshold concepts of IL must be contextualized for meaningful learning.

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Keywords: threshold concepts, information literacy, STEM education

Information Literacy in Digital Environment: Challenge for Library World in the New Millennium

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This paper presents a panorama of efforts by the librarian community, including Albanian library professionals, in a multimedia society in order to fulfill their mission of Information Literacy education and training for different library user/client groups as an indispensable tool. Information Literacy makes it possible for citizens to fully utilize the "magic" era trends that new the technological infrastructure with its "magic mountain of information" offers. In light of unavoidable libraries trends and developments in the digital environment, the paper demonstrates the vital role of librarians in promoting Information Literacy in the digital area as a signal skill for lifelong learning in various situations and in different user groups.

The first part provides information about new technological library trends that took place rapidly at the beginning of the 21st century, trends that have broken through library walls by producing "intelligent" and "hungry" users. Based on librarian questionnaires, a brief review is given to the digital era's different clients' needs - some people are overloaded with information while others are starving for information - "modern" user demands and user competences. Within the triangle of trends, users, and libraries, Information Literacy is a challenge forcing librarians to refocus on "digital users" with a variety of educations. The challenge is also linked to growing influence of media and the professional need for better information and/or knowledge management.

The second part, related to official the statistical data website, traces the clients' needs, even in the 21st century, to integrate more skills into everyday library instruction such as: Web use, digital information, digital content, digital reference, communication environments, e-equipment, and other opportunities coming largely from the virtual world. The article then moves on to look at the most important mission of reference librarians in the digital world, that of enabling users to benefit from century's technological achievements, preparing "capable drivers" well versed in the "digital information superhighway," which is changing more than ever the ways of learning, thinking and communicating.

The paper concludes that in the age where the users, old or young, are going to live and/or grow with technology, when the Digital Agenda is the European Commission's Strategy, Information Media Literacy is a challenge. The century's main mission for all kinds of libraries in the New Millennium, is to empower users to become more self-sufficient in developing information gathering, to get the most out of digital technologies, and to develop evaluating skills which will assist them during this time of rapid changes. But I am optimistic, because worldwide the effectsof the librarians' everyday worktakes time to appear. It is notsoeasyto measuresuccess. Better and faster service for users who always ask for more is coming. But a great deal of work remains to be done.

Keywords: *Digital area. New Library Trends. Users. Information Literacy. Librarian.*

Information Horizons Mapping for Information Literacy Development

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The purpose of this paper is to develop a new insight into information literacy research based on a qualitative study of selected doctoral students. The concept of an information horizon represents a map (visual metaphor) of information sources and services based on a current information need. It expands our understanding of methodological literacy of doctoral students regarded as information practice and experience in information problem solving. Deeper analysis of information horizons produced as part of 19 interviews with doctoral students can shed light on information needs and uses. The study is part of a larger project on information behavior of doctoral students. In light of previous phenomenographical research (e.g. Boon, Johnston and Webber 2005) the study implies disciplinary differences as significant for information literacy research.

We applied the methodology of information horizons mapping following the research of information horizons in information science (Sonnenwald & Wildemuth 2001, Sonnenwald 2005, Erdelez & Means 2005). Visual analyses of 17 information horizons determine the contexts of information literacy as information resources and relevance assessment. Doctoral students experience difficulties in narrowing and defining the research topic as noted with young students by Head (2013) and in our study (Steinerová 2013). The analyses of information horizons were based on the framework of information needs, evaluation of information, and social networks. Most frequent and least frequent usage of sources and priorities were analyzed including the concepts, shapes, and links. Findings indicate that information strategies are cognitively driven by topics, types of sources and predictability of relevance. The role of cognitive authorities and decision making is emphasized. The core processes include finding context and cognitive development (big picture, terminology, tasks, problem-solving). Results confirm more detailed granularity of categorization with humanities and social sciences and emphasis on electronic resources with technical sciences. Examples of information horizons mapping are mentioned (e.g. social psychology, Japonology). Three information patterns of information use are derived: the interactional, the sequential, and the evolutionary patterns. In conclusion we present recommendations for information literacy support for single patterns for information literacy development. The information landscape of doctoral students in resource management is redefined and several system features for information mapping in digital environments are proposed. Expansion of information literacy to broader contexts of workplace and worldview has been proposed.

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Keywords: *information horizons, information literacy, information mapping, phenomenography, disciplinary differences*

Information Heuristics of Information Literate People

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While turning towards the electronic environment, people increasingly deal with a multitude and variety of information and sources to be found, evaluated, extracted, synthesized, interpreted, approved and used. Time deficit and insufficient skills make information users apply many shortcuts, ignore some information and use heuristics. Using heuristics - understood as sense-making activities that help information users make a satisfying choice of the sources, distinguish the content of various quality and sufficiency and reach appropriate decisions - seems to be very sensible in complicated information environment. The use of heuristics can be deliberate or intuitive at many stages of people's information activities - when they seek something on Internet, use search engines, conduct source evaluation (credibility assessment) and critical reading.

Objectives and Methodology

Critical analysis of documents and research findings is used as a base to identify and create a short (preliminary) inventory of information heuristics that people use at various stages of seeking and using online information to solve their information problems. Next, heuristics is discussed in the context of information literacy (IL) programs and education. Finally, the challenges faced by information literacy educators are considered.

Results and Conclusions

The analysis of heuristics offers some additional explanation of online information behavior and personal information management strategies. Understanding the heuristic processes used in information seeking and evaluation (e.g. increasing individuals' reliance on more social means of online information processing and evaluation) can help literacy educators and others to design better IL programs and teaching methods to increase Internet users' information literacy and help them to assess tangled Web avoiding deception, manipulation, misinformation, information stress, unnecessary effort and waste of time. The result of the research is a proposal to treat heuristics as intuitive but not accidental search tactics based on experience that should be included into IL training.

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Keywords: *Information heuristics, cognitive heuristics, online information behavior, personal information management, information literacy programs*

Linked Data Literacy for Librarians

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Linked Data has become an important issue, not only for the process of building the web of data, but also for mutual knowledge transfer between libraries and the web of data (Danowski & Pohl 2013). Based on a study concerning Linked Open Data applications in libraries (Prongué & Hügi 2013) and the qualifications of future librarians involved in the development of such applications (Hügi & Prongué 2013), we built a one-day training program for academic libraries. The overall goal was to make librarians literate concerning the LOD technology in a single day. With the help of that training program, the librarians (mainly people occupied with cataloguing) should become cognitively able (Hill & Hannafin 1997) to reflect the integration of Linked Data in their actual working environment. Therefore, we considered it necessary to couple the training program with the development of cognitive strategies.

To guarantee maximum achievement of literacy, the program was designed with two didactical constraints, firstly that all lessons were consequently taught as an alternation between theoretical and either practical exercises or recreation breaks, and secondly that every theoretical intervention should ideally last 20 minutes but never longer than 40 minutes to avoid monotony and assure hands-on experience. No time limits were given concerning the duration of practical exercises. These decisions led to the creation of short to middle length teaching units for the mediation of Linked Data essentials and short to long practical exercises that were performed alone or in small groups of two to four participants. These basic modules were then arranged in one logical sequence according to our constraints.

The actual program consists of eight theoretical and seven practical modules that can be combined differently with respect to the needs of the clientele. The teaching units and exercises tried to cover all aspects that were considered by experts working in the domain and being involved in the development of state-of-the-art projects. Our experience - after having thrice taught the program described in this paper - showed us, that there is more flexibility in arranging the starting and end points of the module chain, and that special care had to be taken for the logical sequence of the exercises. The content of the modules ranged from the evolution of the web and the consequences for libraries and cataloguing over introductory units to Linked Open Data, RDF & Turtle, and Linked Open Vocabularies and their added values to the understanding of ontologies and the future of cataloguing. The practical exercises started with the simple analysis of documents in Turtle and RDF/XML and were followed by designing RDF graphs and describing and validating them in Turtle to coding essential elements of an ontology or the definition of a thesaurus in SKOS. The training program ended with an exercise where all participants were asked to discuss and model the integration of the learned stuff into future projects.

In our paper we will give an in-depth description of the didactical approach, the theoretical and practical components as well as their possible combinations. Special attention will be given to the integration of cognitive strategies.

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Keywords: *Linked open data, data literacy, cognitive strategies*

Debating transformative approaches to information literacy education: a critical look at the transformative learning theory

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Information literacy as a concept is often thought of as a functional competency. This paper aims to contribute to the critique (Jacobs, 2008; Webber & Johnston, 2000) of the limitations such an approach may imply. It explores whether such a conceptualization hinders the view of IL as an emancipatory practice. If IL is perceived as a concept which enables learning, and empowers learners through the acquired understanding, than we should also ask: What kind of learning is being enabled? It is because of that question that we aim to analyze the pedagogical process that is inherent to information literacy from the viewpoint of learning conceptualization to see if and how the emancipation which information literacy proclaims can really be achieved. We therefore undertake an analysis of concepts in which we examine the transformative learning theory as conceived by its author Jack Mezirow and cross-examine it with Andrew Whitworth's outlook of a critical information literacy drawn upon his presentation of a critical social science (e.g. Whitworth, 2006). In its definition transformative learning theory states that its task is to develop autonomous thinking by effecting change in frames of reference and paradigms (thought as collective frames of reference). The change in a frame of reference refers to the transformation of meaning schemes during the process of meaning creation (Mezirow, 1997). The meaning created is the one gathered from interpretations of personal and collective experience. The theory proposes that transformative learners are equipped to question performatively or authoritatively legitimated interpretations. This kind of learning is drafted upon Habermas's description of the concept of communicative learning - learning to understand the meaning of what is being communicated. "It involves at least two persons striving to reach an understanding of the meaning of an interpretation or the justification for a belief." (Mezirow, pp. 2). Unlike instrumental learning, communicative learning does not strive to manipulate, but rather to foster understanding and critical reflection of the underlying intentions, values, beliefs and feelings (Mezirow, pp. 2). Another whose ideas inspired Mezirow was Paolo Freire whose depiction of schools as banks where a teacher deposits information into students is crucial for the theory of transformative learning because from this Freire created the concept of conscientization. The banking concept of learning consequently diminishes students need and ability to think reflectively and auto-reflectively because it is not the interpretation of the deposit that is important rather its precise reproduction. In this passivized state, students are unable to intervene in their environments to solve detected problems. Conscientization on the other hand is a critical awareness that one needs to learn in a way to be able to detect the social, political and economical contradictions and act against oppressive elements of reality (Kitchenham, 2008). Since it has been noted (e.g. Whitworth, 2006; Jacobs, 2008) that these theoretical foundations describe the critical capacity of information literacy, it is our ultimate goal to take a closer look at how the intended comparison of concepts informs (critical) information literacy theory and practice.

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Keywords*: information literacy, learning, transformative learning theory, critical information literacy*

Diving into Deep Water: Developing an Information Literacy Rubric for Undergraduate Syllabi

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The undergraduate curricula can be as deep as the ocean because as well as the water that can easily be seen, there are also the deep currents that actually move the blue ocean masses below. So, if one wants to change the pedagogical focus of the educational ocean there is the need to dip into the profound curricular structure, a concern discussed by Li (2013) at ECIL in 2013 and in the literature, but the focus in this paper is on the actual development of a syllabus rubric for an institution where professors/lecturers seldom practice research. In the case of information literacy (IL) there is the challenge of how to effectively impact the key layers of higher education learning beyond the remedial IL programs conducted at libraries, or even the non-credit, and in some cases, credit courses that enable students to gain information skills but do not really achieve an IL impact on the pedagogy in the core curricular courses. Library actions do not reach the foundations of the educational process where core undergraduate learning takes place and hence is not successful in transforming university syllabi . An effective strategy to address this is to embed IL into the curriculum by diving into the course syllabi themselves, a major task that seems insurmountable at most universities. However, this challenge has been met by CETYS University, an institution located in Northern Mexico that has information culture as a goal in its strategic plan. This has been translated into the mission of having graduates with solid information competencies. The steps to implement the official IL statements mandate were to carry out a survey whose results were used to define IL strategies (reported in the previous ECIL proceedings), and among the main strategies was the appointment of an inter-campus and inter-college professor committee to identify changes needed in the curricula. After a semester of work, the committee concluded that every course of each curricula needed to implement IL as part of the pedagogical approach, coming up with a scoring rubric to communicate the IL-related content required in course syllabi to achieve IL learning. The rubric had the implicit goal of reaching a university IL standard and the aim of helping academia to self-assess IL in course syllabi. The rubric included ten components related to fostering information search and use in learning activities, non-textbook use, English language literature requirements, request of essays, and research methods and paper style elements, among other elements. The identification of these standards was based on CETYS information culture needs. The implementation will undergo a first introduction in eight new e-learning syllabi, where professors´ feedback will be evaluated. The first trial dive is currently underway, and a later deployment will be an ocean-wide in-depth implementation in the rest of CETYS undergraduate syllabi.

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Keywords: *Information literacy pedagogy, information literacy rubric, information instructional design, higher education*

Towards Adult Information Literacy Assessment in Latvia: UNESCO Media and Information Literacy Competency Matrix in Practice

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Objectives

The objective of the paper is to analyse the implementation methodology of the UNESCO Media and Information Literacy (MIL) Competency Matrix in the assessment of adult information literacy competencies, as well as to characterize the information literacy level and educational needs of the adult population in a sample territory of Latvia. The study has been carried out within the European Social Fund project "Development of innovative diagnostic instruments for regional growth".

Theoretical Approach/Methodology

The theoretical basis of the study is the 'livelihood' concept, broadened by social and cultural dimension. The concept 'livelihood' defines resources that can be used or exchanged to satisfy the needs of an individual, family or other social group. "This may involve information, cultural knowledge, social networks and legal rights, as well as tools, land or other physical resource" (Wisner, Baikie, Cannon & Davis, 2004, p. 12). The conceptual model of the study is the UNESCO MIL Competency Matrix. The MIL Competency Matrix consists of three components. MIL Component 1 *Access* "includes the ability to recognize the need for information, media content and knowledge and to be able to identify useful information and media content from all sources and formats". MIL Component 2 *Evaluation* "is defined as ability to understand, critically analyse and evaluate information, media content, the work and functions of media and information institutions". MIL Component 3 *Creation* "is defined as the ability to master the production knowhow of information, media content and new knowledge and effectively communicate with others" (UNESCO, 2013, p. 53-54). In compliance with the MIL Competency Matrix, the performance criteria are developed for the assessment of information literacy competencies. The research methodology is a mixed methods approach. The information literacy education needs are identified using qualitative data obtained from focus groups of adult population in a sample territory. Task-oriented practical tests (based on MIL performance criteria) and self-evaluation questionnaires reveal the level of information literacy of the adult population target group in a sample territory.

Outcomes

The study presents conclusions on the possibilities for adapting the UNESCO MIL Competency Matrix and for developing a methodology for adult population information literacy assessment. During the field research in a sample territory and with an adult population target group, levels of information literacy are assessed, and information literacy education needs are clarified. The research results can be used for the development of diagnostic instruments for regional growth, planning of adult education, elaboration of information literacy training programmes, as well as for self-evaluation of information literacy competences.

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Keywords*: UNESCO MIL Competency Matrix, livelihood, information literacy, measurement and assessment, performance criteria, Latvia*

Evaluation of Organizational Literacy in Context of Organizational Learning: A Literature Review

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Organizations create new structures in order to provide continuity of organizational processes, achieve competitive advantage and implement new global technologies. It wouldn't be wrong to say that concepts such as learning organizations and organizational learning have been emerged in the literature according to new managerial perspectives that are shaped by new organizational structures. These concepts provide significant opportunities for organizations in terms of creation, use, transmission and sharing of information. As one of these concepts, organizational literacy represents a vital information literacy component in terms of adaptation to new market conditions and organizational culture, providing competitive advantage, and making organizational memory alive. In the light of this information, organizational learning and organizational literacy are stated and evaluated conceptually according to different points of views in the literature. Effects and impacts of organizational literacy on learning organizations are also discussed in the study. Results obtained from the literature reflect that organizational literacy is a term that integrates organizational learning and organizational memory.

Introduction

Organizations are required to adapt themselves and their organizational structures to rapidly changing conditions especially in the organizational information management fields such as ingestion, use, and sharing of information according to technological convergence emerged in the related sector. Learning processes conceptually provide a competitive advantage in today's conditions to the organizations with the contextualization of the basic organizational information management. Providing continuity of organizational development via creation and use of continuous learning methodologies is an important factor for adaptation to changing conditions, implementation of new technologies, and being a part of change. In order to maintain organizational workflow, information is produced by organizations as a result of their structures and as well as their internal and external interactions with their environments. It can be said that factors such as characteristics of organizations, sectorial properties and target audiences are decisive factors that create unique organizational information management structures and schemes. On the other hand, information retrieval, searching, use and sharing activities are also carried out by employees according to organizational information management system affected by organizational identity and organizational culture (Okay, 2000, p.39). Adaptation to mentioned activities restricted by the organizational identity and organizational culture also requires a particular learning process for employees' information use within the organization (Erdem & Dikici, 2009, p.205). This situation is also drawn in the literature by definitions of organization. In this context, organization is defined as a set of coordinated components such as opinions, beliefs, traditions, values and behaviors (Brewer & Crano, 1994; Bilgin, 2003). In light of this definition and these studies, it can be said that organizational structures are created according to sharing of components mentioned by employees. Starting from this point of view, while norms, rules and values determined by organizations are explained as main components reflecting organizational identity and organizational culture, these components are described as structures that directly affect adaptation processes of new organizational developments. In parallel with this topic, it is seen that many models developed on organizational learning and relationships with information management are described in the literature.

This study aims to demonstrate the importance of organizational literacy that are related to effective use of organizational memory by organizational learning processes.

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Keywords: *Organizational learning, organizational literacy, organizational memory, information literacy*

Evaluating the Degree of School Librarians' Involvement in Providing Information Literacy skills to Students using The Big6 Model as an Assessment Tool

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Introduction

School librarians have an important role in the 21st century and are expected to impart a high level of information literacy (IL) skills to students as part of the school education team (Branch & Oberg, 2001). This study represents the first investigation of the association between the professional self-efficacy of school librarians and their self- perception of their role within the school community, and the degree of their involvement in students' research processes, while using the Big6 Information Literacy Model as an assessment tool.

Aims and Objectives

The purpose of this study was to explore the degree of school librarians' involvement in delivering IL skills to students and the correlation between the degree of involvement and the professional self-efficacy of the librarians and their role perceptions within the school community. The IL model that was chosen for this study was the Big6 model. The Big6 approach to information problem-solving was developed by information literacy educators Mike Eisenberg and Bob Berkowitz, and is considered one of the most recognized information literacy models worldwide (Eisenberg and Berkowitz, 2003) .

Methodology

Data was collected through an online questionnaire and analysed quantitatively. The sample comprised of 71 school librarians asked to define the degree of their involvement in students' research processes according to each of the Big6 process stages. The questionnaire included background questions; six statements evaluating librarians' involvement in students' research process according to the six stages of the the Big6 IL model; twelve statements evaluating librarians' professional self-efficacy, identified as most important for providing reference services in academic libraries (Bronstein, 2011), and six statements, evaluating the school librarians' role perception, representing different school library roles as described in national and professional librarianship associations (American Association of School Librarians 2009).

Results and Conclusions

This study shows that school librarians involvement in students' research process is relatively low and focuses on "Information Seeking Strategies" and "Location and Access" (Big6 Model stages 2 and 3). A higher involvement in other stages of the research process is correlated with the self-perception of librarians as being teachers, teaching assistants, or leaders in the school community. Emphasizing and encouraging these perceptions may therefore position school librarians as significant contributors to students' development of IL skills. The most robust finding of this study is the significant positive correlation between self-teaching and professional updating and the degree of involvement. This leads to the conclusion that the professionalism of the librarians, their status and their ability to provide IL skills to students depends on their ability to maintain professional updating.

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Keywords: *school librarians, Information literacy, professional self-efficacy, Big6, Research process, students*

What is the employers stand on information literacy – researching employers on expected generic outcomes of their future employees?

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Relevant research, experience and strategies used internationally show that information competencies present a backbone for the development of generic competences. Information literacy prepares learners to connect, interact with, and utilize the accessible wealth of information. Correlation between information use and generic competences (Bowman, 2010) is based on the fact that information is the building element of learning, problem solving and decision making. The individual researches, learns, solves problems, collaborates and makes decisions based on the information gathered from various sources. The key skills of 21 century workers (Bartram et al, 2005) include knowledge of different resources as well as the various ways to access them, setting up and applying efficient research strategies, interpreting found results, synthesizing new knowledge and present knowledge in an ethically correct way taking in the all aspects of the ease of use of digital information (in the sense of copy, transfer, ignoring copyright. The contemporary development of information environments is marked by the growing complexity in both quantitative (number of available resources) and qualitative (value, relevance, correctness) sense which demands additional research of information competences necessary for the successful transformation of individuals from the tertiary educational sector to the employment market. The authors investigated employers' interests in generic competences during the employment selection process. Employment sector and workplace research show that there are different generic competences expected from the employees (Head et al, 2013). By interviewing Croatian employers about the generic competences authors have gathered a database of competences, which are then mapped with the information literacy competence in order to build the taxonomy of the relevant and measurable learning outcomes. The primary focus is to incorporate the employability viewpoint of the competencies and learning outcomes and to make these more visible in order for them to be successfully integrated in the study programs. The research presents the final stage of the triangle research of teachers, students and employers so that in developing a framework of generic information literacy competences all participants of the educational process and marketplace are involved.

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Keywords: *employability, generic competences, information literacy*

Information Literacy: A Research Report with the Directors of the Libraries of Institutions of Higher Education in Southern Brazil

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This work, now published as a final report of research carried out between 2006 and 2011 provides "pathways" on the concept of Information Literacy and its development. It is argued in favor of studying the technical dimensions, aesthetic, ethic and policy of Information Literacy. The survey results show that philosophy, sociology and education are areas of knowledge that have a close relationship with Information Literacy. The study also suggests that the creation of theoretical principles for this subject area must be based on the social construction of reality, social representation, among others. Regarding the methodology of the research, this was based on a qualitative approach and application of a structured interview with open questions for thirteen (13) directors of libraries of Institutions of Higher Education (IES) of the State of Santa Catarina, southern Brazil. The responses were analyzed according to the technique of the Collective Subject Discourse (DSC) and theoretical and conceptual aspects of Information Literacy. As a result, a single speech was created for respondents' answers, organized by themes of the interview, consisting of the analysis of verbal content (answers to the interview). It was extracted from each one of the statements: the core ideas and the corresponding key expressions composing a speech - synthesis in the first person singular. The research objectives were defined as follows: first, to understand the social representations and the social construction of reality about Information Literacy of the directors of university libraries, and, second, to propose a set of theoretical principles to the development of Information Literacy of these professionals as subjects of transformation. The results showed that the development of Information Literacy demands pedagogical action, i.e., education for information, and this is an essential part of the initial and ongoing training process by which all individuals must experience. Information literacy is a process and, as such, depends on the internalization of conceptual foundations, attitudes, values and skills for understanding the informational universe, emancipation and citizenship, essentials for the directors of libraries in Institutions of Higher Education and for life in society.

Keywords: *Information literacy, university libraries, institutions of higher education, information literacy education*

Teaching information literacy in Slovenia in primary and secondary schools

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Information literacy is a basic competency. We have potential access to an enormous amount of information and how to deal with all that data and how to use all the tools we have to help in searching the right information, is a skill we all need. We try to teach that in our schools. Our goal is that at the end of schooling our students know how to search, critically evaluate and to use the information. That is one of the basic skills for each of us, for active citizenship and for an active life.

The point of information literacy and also of our teaching has to be that students are autonomously able to find the right information in real time, critically evaluate it and use it. This kind of learning starts early, from the time we learn how to use technology. It would be ideal if information literacy could be a subject we teach in all schools, primary, secondary and at universities.

In Slovenia we don't have a separate subject, but we do have a curriculum for library information science for primary and for secondary schools. In primary schools students are aged 6-14 years old, in secondary schools students are 15-18 years old. Librarians teach students how to deal with information. Our goal is for every student to be information literate. Information literacy in our curriculum includes general knowledge of information sources, their selection and use for various purposes.

Students learn to a level that allows them to autonomously acquire and use information after formal education, regardless of their level of schooling. The objectives in the curriculum are determined by the level of information literacy which should be mastered by every resident to enter the world of information.

Curriculum for Library Information Science (LIS) were prepared at The National Education Institute of the Republic of Slovenia as are all the other curricula. Curricula for LIS for primary and secondary schools were adopted by the expert council at Ministry of Education. That means that all schools are obliged to implement curricula. In primary schools this means that each class has a minimum of 4 sessions per each year, and lessons are implemented as a cross-curriculum theme. That means a minimum 36 classes in primary school for each student. In secondary school we have a minimum 15 sessions for each form.

Keywords: information literacy, curriculum, LIS, primary school, secondary school, Slovenia

The Role of Libraries in Shaping 21st Century Skills in Poland

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21st Century Skills

The notion of "21st century skills" has been going through scientific debate since the beginning of the 2000s. These skills have been defined in various ways, and the discussion as to what constitutes a set of 21st century skills can be found in a body of literature. Media and information literacy (MIL) seems to be one of the key-factors that enables people to learn 21st century skills. In some documents, MIL itself is perceived as one of those skills, too. However, apart from the US, one tendency can be observed: the skills of the 21st century engage first of all educators and not librarians. This unjust state should warn librarians and encourage them to get more involved in the topic and, as Adeyoyin et al. (2011) underline, "to develop and define our [=librarians – *my note*] role before others force their definition upon us".

Poland

In Poland, in November 2011, the Ministry of Administration and Digitization was established. One of the ministry's main missions is to promote digital competences among citizens. In July 2013 a service of media education, named *Media Guidance* (Pl. *Drogowskaz Medialny*) was launched. It was an occasion to present to a wide Polish public a ministry vision of skills and competences necessary in the 21st century. In the ministry vision, digital competencies found their place, and the terms "media education" and "digital education" were used; however, neither the role of libraries in shaping those "educations" was indicated, nor was the term "information literacy" or "media and information literacy", constituting, as noted before, the core of 21st century skills framework in the US and worldwide. In several projects the vague need for establishing the "space where skills can be shaped" is postulated. But these "spaces" exist already! They are named "libraries".

Methodology

Taking into consideration all above, I would like to propose a rhetorical analysis, based on Burke's rhetoric and identification theory (Burke, 1969). The documents related to 21st century skills published to date in Poland will be analysed.

Expected Results

A deepened analysis of governmental documents should confirm the initial hypothesis saying the role which libraries can play in implementing MIL programmes and shaping 21st century skills is unnoticeable. It will also enable us to identify the gaps where MIL programmes and practices promoting acquiring and developing those skills could be implemented.

Study Significance

It will be the first attempt to identify a problem of omitting MIL in official governmental documents. and to prepare a proposal arguing that libraries are able to actively participate in shaping 21st century skills, since it is not solely the domain of educators and schools.

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Keywords: *21st century skills, information literacy, libraries, governmental documents, Poland*

Information literacy and public libraries in Peru: an approach to its study

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Castells (2001) defined social exclusion as a process by which the access to positions that would allow an independent subsistence is prevented to certain individuals and groups systematically. An economic position perceives the exclusion only from the economic point of view; nevertheless, it goes beyond that, because it is, mainly, the deprivation of capacities. This new perspective comes from the contribution of Amartya Sen (2000) for whom poverty is not only due to strictly economic factors but rather to the lack of capacities. In this sense information literacy could be an opportunity to increase capacities and hence to contribute to social inclusion. Public libraries have been identified as one of the most propitious spaces to increase capacities in underprivileged sectors of society (Muddiman, 2000; Gómez y Pasadas, 2007). In Peru, as in other Latin American countries, information literacy activities are still scarce and have been developed mainly in university libraries (Uribe, 2010), and to a lesser extent in other types of libraries.

This paper presents the background of information literacy in Peru. It is based on qualitative research with the objective of exploring the situation of the information literacy activities in public district libraries in the province of Lima. The sample consisted of the public libraries of the five more populated districts of the province of Lima that serve more than three million inhabitants and represent approximately 37% of the population. For the data collection a documentary investigation was made; observations were applied, and semi-structured interviews were conducted with the people in charge of the selected public libraries.

Despite the abundant literature, regulations of a national character, and international indicators on the subject, the results show that information literacy is still not a recognized and permanent activity in public libraries. Successive governments, and especially district governments, seem to ignore the potential and the social yield of these institutions. Given that regulations have not been implemented, the low level of development reached by these libraries prevents the successful accomplishment of information literacy activities.

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Young People's Critical Information Literacy and Political Agency

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This paper explores the role of information literacy in relation to political agency - how information literacy education can support people's development of the abilities that enable people to engage in the political world around them and choose actions that are consistent with a coherent sense of self. It focuses on the educational role of libraries through information literacy and considers the political position that libraries take when they engage with educational issues, including literacy instruction. The paper presents initial findings from doctoral research conducted in a school in the United Kingdom, which researched teenagers' conceptions of political information, how they interact with information sources and how this relates to their sense of political agency.

The paper first discusses the concepts of critical information literacy and political agency with a short review of theory and practice that informed the doctoral research, including work by authors writing from a library and information studies perspective (for example Kapitzke, 2003; Elmborg, 2006; Whitworth, 2011) and authors writing from a critical pedagogical perspective within educational theory (Giroux, 2011). The paper then discusses the fieldwork for a doctoral research study, which took a mixed methods, phenomenographic approach. The rationale for the methodological approach is explained. A description of the research methods - a combination of questionnaires, repertory grid interviews, focus groups, class activities and observations –is provided. The paper discusses how the combination of research methods allowed the researcher to explore how the participants conceive of political information, how they interact with the information to which they are exposed and with one another when discussing political issues and how they position themselves within their political world. Particular focus is given to one of the research methods used, repertory grid technique, which was used to gain an insight into how the participants conceive of political information, how they interact with the information to which they are exposed and how they position themselves within their political world. Tentative research findings are shared, to illustrate the depth of data that can be gathered using these methods and to provide an insight into the value of critical information literacy.

The research is working towards recommendations to contribute to the development of a critical approach to information literacy instruction to be used in practice in school, public and academic libraries. It utilises critical pedagogical theory to assess current models of information literacy in a critical light, to understand their limitations and suggest ways teenagers may be supported more effectively in relation to their interaction with political information. The repertory grid technique is a relatively novel method within the discipline of library and information science, but has great potential for research in the discipline. It is hoped that readers will benefit from the paper's explanation of the method and its potential for use in library research and practice. The data from this fieldwork is being analysed using a qualitative and phenomenographic research method, and initial findings are discussed which it is hoped will provide an interesting insight into how young people's political agency relates to their attitudes towards politics, and how librarians may develop information literacy to support their understanding of the role of information sources to their experiences as citizens.

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Keywords: *Critical pedagogy, education, information literacy, political participation, young people*

Qualitative research in the field of Information Literacy in the second decade of the XXI century

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Objectives

The paper discusses some current methodological issues related to the field of Information Literacy (IL).

Within the IL area, similarly as in the whole Library and Information Science discipline, there exist three main research designs, namely – the qualitative (interpretative), quantitative (positivist), and mixed methods (MMR) ones. The mentioned approaches themselves, as well as different methods and techniques belonging to them, have already been examined, at least to some extent, in the existing IL literature (see, for example, Lipu, Williamson & Lloyd eds., 2007). But what are the most r e c e n t methodological trends? Are any research procedures preferred today within the IL domain? This study attempts to partly answer such type of questions.

Thus, the key purpose of this paper is to identify the q u a l i t a t i v e methods and techniques for conducting IL research, with a special focus on those actually u s e d (not only "theoretically" proposed) in the second decade of the XXI century. In consequence, the paper aims firstly at discovering what qualitative procedures have been employed in the empirical investigations into various aspects of information literacy in years 2011-2014. Secondly, it seeks to categorize them (research methods, data collection techniques/data sources, analytical frameworks etc.) and to illustrate each category with examples of the studied IL problems.

Methodology

This paper is descriptive and exploratory in nature, with elements of simple statistics. The critical literature review has been the leading method. The EBSCO's specialized database LISTA (Library, Information Science and Technology Abstracts) was searched to find articles reporting empirical research on different dimensions of information literacy. The query "DE INFORMATION literacy – Research", with limiters (publication dates 2011-2014), retrieved 103 works (in March 2014). Abstracts and, where necessary, full papers were reviewed to confirm or deny relevance. All of the 103 texts were analyzed, in order to (1) select those utilizing the qualitative research design, and next (2) to produce the list of qualitative approaches, methods and techniques being used (and relate them to the issues or objects explored). The articles fully and only partly devoted to information literacy have both been taken into account.

Outcomes

The first observation is that in years 2011-2014, as in the previous periods, the three methodologies (qualitative, quantitative and mixed methods) have been used in the IL research. The preferred qualitative data collection techniques are the focus group interview and individual interviews.

This study has been based on the content of only one source. The LISTA database, although comprehensive, indexing more than 750 LIS journals, plus books, research reports, proceedings, etc., does not, of course, cover all IL-related publication. It would be interesting to check in the future projects where the same trends can be detected basing on some other resources, e.g. Google Scholar or Social Science Citation Index (the category Information Science and Library Science).

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Keywords: *Information Literacy, Methodology, Qualitative Research, XXI century*

Information Literacy Competencies among Social Sciences Undergraduates: A Case Study Using Structural Equation Model

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This paper analyzes the Information Literacy profile of 195 randomly selected students in Social Sciences from three Spanish universities. The research is based on a mixed assessment model, subjective-objective, centred on perceptions and evidences, in order to obtain a clear picture of students' Information Literacy competences. Above all, the structure underlying this set of competences is made visible. The measurement tool, based on the IL-HUMASS survey, includes twenty six variables (competences) and three scales: one is based on subjective perceptions or attitudes (deployed in both motivation and self-efficacy). The other two scales point out at objective evidences regarding individuals' knowledge (to know) and skill (know-how). Competencies are clustered in four categories or macro-competences (search, evaluation, processing, communication & dissemination). Scales have been widely validated in previous studies, and results show high levels of internal consistency and reliability.

A first descriptive analysis provides mean values of the observed variables with regard to the three previously defined subjective and objective scales. On the subjective side, while motivation or importance attached by students to the observed competencies is high, self-efficacy is slightly lower. Objective mean scores related to the students' knowledge and skills are somewhat lower, and therefore efforts ought to be made for their improvement.

A further research step, through the application of the structural equation model (SEM) which combines multiple regression and confirmatory factor analysis techniques, will lead us to a better knowledge of the relationships among the four sets of categories (macro-competences), as this issue cannot be measured otherwise. Thus, correlations among the four categories concerning each of the three previously defined scales may be estimated. Results show a strong correlation between the pairs of categories search-evaluation and evaluation-communication with regard to the attitudinal scales (motivation and self-efficacy). Strongest correlations have been found among the categories of evaluation, processing and communication concerning the knowledge scale. Conversely, the same comparison of categories regarding skills scale shows weaker results. Evaluation of correlations among the four categories regarding this work's three scales will contribute to a better understanding of the "picture" on Social Sciences Information Literacy in Spain. At large, it could be a sound basis for the establishment, in learning and teaching, of future Information Literacy strategies.

Keywords: *IL-HUMASS, information literacy, structural equation model.*

Domain-Specific Test of Procedural Knowledge About Information Searching for Students of Computer Science

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Theoretical Background

Students have to be information literate due to the increasing amount of available information. Skills associated with planning, conducting and evaluating information searches may be considered as crucial in students' lifelong learning. To satisfy an information need, it is important to know how to find and retrieve information. Most standardized information literacy tests only measure declarative knowledge about information search and evaluation instead of procedural knowledge about search processes and the skills needed to perform successful searches. In order to assess procedural knowledge, specific information search tasks have been used. Such tasks, however, tend to be time-consuming, and it is difficult to evaluate their results objectively. To overcome these problems we constructed a standardized test of procedural knowledge about information searching tailored to the domain of computer sciences, the PIKE-CS (Procedural Information literacy Knowledge test for computer science students). To identify skills necessary to solve information problems, a skill decomposition was conducted based on the information problem solving model (Brand-Gruwel, Wopereis & Vermetten, 2005). Nine sub-skills were identified which can be classified into two broader categories: Development of Search Strategies and Application of Search Strategies.

Method

Based on our skill decomposition and focusing on information-seeking behavior, an initial pool of 33 items was created. We opted for a situational judgment test format (McDaniel, Morgeson, Bruhn Finnegan & Campion, 2001): Each item comprises a short description of a situation typical for information searches followed by four responses varying in their appropriateness to solve the problem. Each response could be rated on a 5-point Likert-Scale. The 33 items were administered to a sample of N=7 experts (computer scientists with several years of experience in information searching). Based on their responses, five items were eliminated. With regard to the expert ratings, a scoring key focusing pairs of response alternatives was developed. For each of these pairs it is checked if the more appropriate alternative is rated higher on the Likert scale than the other. If this is the case, the subject scores a point. The final scoring key consists of 85 such pairwise comparisons. The items were administered to a sample of N=18 computer science students; six items with a low item-total correlation were removed and the scoring key was refined. The final 22-item version of the test was administered to a sample of N=89 freshmen of computer science at three German universities.

Result

In the pilot study the scale achieved an internal consistency (Cronbach's alpha) of α=.78 with corrected item-total correlations ranging from r_{itc}=.03 to .62. The reliability coefficient was lower in the final study (α=.54) which is supposedly due to the restricted variance of test scores in this sample of first-year students. The mean difference between subjects with vs. without programming experience in a professional context – which can be interpreted as a proxy for search experience - is highly significant, pointing to the validity of the test.

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Keywords: *Information-seeking behavior, situational judgment test, procedural knowledge, computer science*

Experimenting with I-Learn Model and Its Impact on Students' Learning

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I-Learn is a new information use and teaching model designed by Prof. D. Neuman, the College of Information Science and Technology, Drexel University. The model includes six steps in teaching and applying information literacy (IL): identify, locate, evaluate, apply, reflect, and know. According to Prof. Newman, the past information literacy education focused more on information seeking rather than learning. "In the context of day to day in library settings, the 'access-evaluate-use' sequence is too often considered an *information-seeking* process rather than a *learning* one. In practice, students are regularly taught how to access various databases and other resources and how to evaluate them for accuracy and relevance to their needs. The actual "use" component is frequently considered outside the realm of library instruction and is left to the student, the teacher, or the professor" (Neuman, 2011). The I-Learn model incorporates the missing steps in the teaching/learning cycle by adding "apply, reflect, and know."

The efficacy of this model to strengthen student's performance with literacy skills in course work needs further examination. There is the potential to apply the teaching of the model's steps "apply, reflect, and know" in a variety of academic courses. For instance, Stacy Greenwell, a library school student at the University of Kentucky, conducted an experimental study for her doctoral dissertation using the I-Learn model (Greenwell, 2013). She utilized a classic experiment to determine if I-Learn model could achieve higher rates of "know" usage rates upon the completion of library instruction. The findings of the study found no significant differences between these two groups.

The presenters feel that I-Learn model can deepen students' perceptions on and skills in information literacy. To confirm this belief, the presenters plan to apply I-Learn model to 2014 summer Educational Opportunity Program (EOP) students in Speech Communication classes at Rider University. The study will adapt Greenwell's Classic Experiment design. Thirty-four EOP students will take a pre-test of 20 questions before formal library research instruction. The instructors will introduce the first three steps of I-Learn in the first session to all the EOP students. In the second session, the students will be divided into two classes. One class, the experimental group, will be taught the last three steps of I-Learn Model. The other, the control group, will still stay on the first three steps of I-Learn Model. At the completion of the summer program, the post-test with the same 20 questions will be administered and a comparison of the results of the pre and post tests for both EOP sections (34 students) will be evaluated. A rubric will be used to analyze the quality of the research cited in their papers/presentations. It is the intention of the study to contribute a stronger applicable understanding of utilizing the I-Learn model for information literacy instruction.

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Keywords: *A minimum of 3 and maximum of 7 keywords should be added. Commas should be used to separate keywords*

Novel links in embedded librarianship for information literacy

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Introduction

The concept of embedded (or blended) librarianship is founded on the premise of a purposeful interaction and partnership between academics and librarians who operate at the center of the teaching process, participating actively and holistically in the design and delivery of learning (Bell & Shank 2011; Shumaker & Tyler 2007, p.5). This paper, reports on the planning phase and the preliminary results of an action research project undertaken at a Scottish university for the redesign of an online distance learning information literacy (IL) module. This happens on the basis of an 'embedded librarianship' model, which broadens bibliographic instruction to a novel collaboration, extending IL teaching to incorporate the professional context beyond institutional and geographical borders

Research Design

The research project followed a co-operative approach which brought together work conducted by the IL module coordinator and an Academic Liaison Librarian, who were working at different institutions. The aim of the activities was to add practical value to the students' learning experience by offering them the opportunity to share their work with the wider IL community. The students would not just produce an academic assignment but instructional materials which would be utilised in an IL session and also offered as an open educational resource. This process entailed collaboratively redesigning the assessment instruments, actively involving the librarian in the delivery of the IL instruction scenario (via an online lecture) and jointly selecting students' work. The project followed an action research design which is a systematic enquiry into existing classroom activities for reflection and the development of improved practice (Parsons & Brown 2002). Data were collected via a qualitative analysis of the students' work which involved the IL programme, a team wiki activity, and a short reflective report. A series of open-ended questions which addressed students' perceived value of this approach were posted via email. Data were analysed qualitatively using Grounded Theory (Glaser 1992).

Preliminary Results

Preliminary results of the group-work exercise and the reflective reports indicate that students reacted positively to the embedded librarianship design, engaged constructively in situated learning and practiced team-working skills via different negotiated roles (editor and proof-reader, project manager and technical advisor). Challenges included differences in time-zones which allowed fewer opportunities for synchronous interaction. The paper describes the next stages in the project which will involve collating students' work to be shared on JORUM http://find.jorum.ac.uk/shared

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Keywords: *blended librarianship, embedded librarianship, information literacy, university, collaboration*

Unravelling the Literature Review: Helping Graduate Students in Education Reconceptualize the Research Process

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Objectives

Graduate students in education struggle with the scope of the literature review. The challenge for librarians is helping students understand that a literature review involves "… constructing meaning rather than a process of accumulating" (Green & Macauley, 2007, p. 328). Students are developing their information literacy skills that encompass finding, evaluating, and synthesizing sources which is the core of the research process. Bruce (2001) describes this as a shift from a 'topical' to a 'psychological' perspective where information is evaluated and selected based on its relationship to the research questions. This study used visualization and collaborative dialogue among a librarian, faculty advisor, and student to extend thinking about the research journey, including the literature review.

Methodology

Five graduate students in education were individually audio- and video-taped while thinking aloud as they constructed a visual map of their research topic. A collaborative dialogue followed where each student was prompted to explain and expand their map. The audio component of each session was transcribed and changes to the map as seen in the video were annotated on the transcript. Dialogue prompts that led to each change were identified, defined, and coded. Prompts that triggered a change on the map relating to a specific aspect of the research journey were identified. Initial student maps were compared to maps resulting from dialogue with the researchers.

Outcomes

Two types of prompts triggered changes to the map. Clarifying prompts occurred when researchers asked questions to unravel the verbal description or visual representation given by the student. Knowledge prompts occurred when researchers offered information to extend student thinking. Clarifying prompts accounted for 37 percent and knowledge prompts for 63 percent of the total prompts from the researchers leading to a change on the map. The collaborative maps showed a significant increase in the number of topics, sub-topics, and relationships connecting key concepts underpinning the literature review. On average, the number of topics increased by 61percent, the links increased by 69 percent, and sub-topics increased by 78 percent. The resulting changes on the collaborative map were broadly matched to stages of the research process. Study design and methods accounted for 50 percent of changes, 36 percent related to the literature review and identification of information, and 14 percent pertained to research purpose and study questions.

Students were also surveyed for their impressions of the mapping experience. Comments include: "The visualization helped me to group major concepts, and finally create an outline of how the research should feed into my literature review." "It also helped in generating new search criteria to find literature I had previously had trouble finding." Dialogue and visual mapping helped students unravel relationships among concepts, giving context and meaning to the literature review.

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Keywords*: Literature review, graduate research, information literacy, librarian-faculty collaboration, visual mapping, collaborative dialogue, research process*

Curriculum Framework for the Development of Information Literacy: Methodological Issues Based on Hungarian Experiences

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Information literacy is the basis of lifelong learning in the 21st century. The aim of the paper is to outline a methodology of creating a curriculum framework for consecutive development of information literacy skills and competencies in all levels of education.

A complex set of competencies necessary to navigate in the information society has to be developed at three levels: basic education (primary and secondary schools), higher education and adult education (Karvalics, 2012). The components of information literacy are to be compared to the requirements of the national curriculum, and assigned to the levels of education. The core elements on each level are selected.

In our model, information literacy is divided into seven sections:

- *Definition of information need*: question formulation in natural language and with controlled vocabulary, defining keywords, defining descriptors or subject headings, using a thesaurus.
- *Definition of relevant information resources*: printed resources, parts of a book, search engines, thematic websites, library catalogues, electronic, digital and virtual libraries, reference databases.
- *Localisation of information*: search strategies, filtering options, Boolean operators etc.
- *Finding relevant information*: finding relevant information in different resources, selecting relevant information, finding the fastest way to the information, eliminating duplicates.
- *Investigation of information from different aspects*: selection, evaluation, analysis, organisation, storing, highlighting the most important elements.
- *Processing information*: reflection, synthesis, making bibliographies, citing.
- *Management of information*: creating new information, applying new knowledge, presentation of new knowledge, managing information, saving information.

These skills are attached to educational levels, and the focus points are highlighted. Based upon that, a matrix is drawn showing how the different elements are related. This way a systematic approach for teaching information literacy can be applied from elementary school to adult education. The knowledge components belonging to the skills of information literacy are organised in a concentric circle, showing how they are built upon each other.

This model gives the opportunity to integrate information literacy components into the curriculum of different subjects at different levels. It helps teachers to define which elements are already learned and which ones need further development.

If this model is applied through the whole national curriculum, higher and adult education can build upon its results. This is an important prerequisite of the effective systematic development of information literacy skills.

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Keywords: *Information literacy, curriculum, competencies*

Social Media Networking Literacy: Rebalancing Sharing, Privacy, and Legal Observance

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Social media networking seems to have exploded as the next big wave after the proliferation of the World Wide Web's Internet interface. The numbers are astounding: for example, over 1 billion people are connected on Facebook, there are nearly as many Twitter accounts, WhatsApp has over half a billion users, and over 200 million people use Instagram. In Sweden, for example, about 97% people ages 12-44 are regular Internet users [Swedish Institute, 2013]. It is not a far-fetched statement to say that the majority of the users on these social media networks are young people, probably at the age where risk assessment is not very high on their priorities [Rowe, 2014]. Sharing is the norm, even of the most intimate and private details. However, some sharing can be harmful, as not only might it intrude into the privacy of the users themselves or those who are connected to them, but it may come back to haunt them later in life with devastating consequences. This has been referred to as the problem of "oversharing" [Woodley and Silvestri, 2014]. It is imperative that social media network users have some level of literacy that allows them to estimate the proper balance between their sharing activities, the needs for their privacy as well as that of their contacts, and the need to respect the intellectual property and reputation of fellow netizens [Hsiao, 2014]. Thus, we define social media literacy as the ability to appreciate the risks posed by social media and to make calculated decisions when dealing with such social media in order to make a careful balance between the needs for sharing, privacy, and legal compliance.

This paper is organized into four sections. In the first section, we briefly summarize the landscape of social media networking on the Internet, as well as selected user social media activities. The second part discusses some of the issues arising from sharing and other activity on social media networks that impact on individual and group privacy, both during and post-activity. The third part discusses some of the legal issues encountered on social media networking sites and the response of users to those issues, particularly intellectual property and defamation. Finally, Part four argues that the balance between the need for sharing, privacy, and legal observance on social media networking sites needs to be revisited, with a view to re-calibrating it so that the severity of future consequences is reduced. The paper argues that the principal way of accomplishing this is to continuously encourage social media networking literacy among users from an early age.

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Keywords: *social networking, information literacy, social networking literacy, privacy, intellectual property, defamation*

Information and media literacy in kindergarten

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As information and media literacy gains more and more importance, its representation for young children becomes a particularly interesting aspect. Also very young children handle media, and are confronted with them whether they want to or not. Therefore it is also very important for young children to know how to deal with media. In general there are two meanings about media. We find scientists, who reject the use of media strictly (e.g. Spitzer, 2012), but also others who think that to deal with media is nowadays a very important skill (e.g. Tapscott, 1998; Stock & Gust von Loh, 2012). We represent the meaning that dealing with media in a moderate way is important for children, so it is very necessary that parents also take heed of what little children do with media. It cannot be used as a "babysitter". Our approach speaks about the use of media in early childhood. It is very important to know that moreover in the childhood context media, techno and information literacy cannot be separated from each other. Especially with regard to the information literacy of young children, we also have to consider media literacy. Information literacy in the classical sense is dependent on the basic skills of reading, writing and arithmetic (Stock & Stock, 2013). These three skills are usually not found in preschoolers, so we have to think about other basic skills for small children. We choose considering instead of reading, painting instead of writing and counting instead of arithmetic. On this basis, we developed a methodological approach for the determination of information and media competence in early childhood. We plan to perform an analysis with children, their parents and their nursery nurse. For the data collection we have to use different methods to study the three different levels. Especially the analysis of information literacy of children poses a challenge. It's not possible to get information with the help of simple questionnaires or interviews (Trautmann, 2010). Here we plan to use puppet interviews (Weise, 2008) and participating observation (Bohnsack, 2003; Mikos, 2005). With the help of puppet interviews it is possible to gain information in a playful way. In the adult context it is much easier to gain information. Here the biggest difficulty will be that parents and their nursery nurse have to be willing to conduct an interview. We plan to use semi-structured interviews and questionnaires (Lamnek, 2005; Hussy, Schreier & Echterhoff, 2010). The study is planned as an international comparison between China and Germany. A big question will be what does the kindergarten do for media education and what do parents expect from the educational establishment? As a first step, in summer 2013, we conducted a small study about "Information- and media literacy in early childhood" Here we asked only parents regarding the information and media behaviour of their children. The study was made with an online questionnaire. It was very surprising that most of the parents do not expect a media education in kindergarten. The most popular medium used by small children was the TV. This medium is not so interesting in the context of information literacy. More interesting are new media, like internet, smartphone and tablet pc.

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Keywords: *Information literacy, technoliteracy, media use, childhood studies, Kindergarten*

Information and Media Literacy of Polish Children According to the Results of "Children of the Net" and "Children of the Net 2.0" Studies

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This paper presents the results of research carried out in Poland as a part of the projects "Children of the Net: communication competencies of youngsters" (Siuda & Stunża, 2012) and "Children of the Net 2.0: communication competencies of the youth" (Kulczycki et al., 2013).

The aim of the research was to establish the level of media and information literacy (MIL) competencies among Polish children aged 9-13 and 13-16 (pupils and students of the 2nd and 3rd grade in the Polish educational system); and to establish to what extent the development of these competencies had been planned in formal education.

The starting point of this research was the publication of a poet and IT specialist, Piotr Czerski, titled "We, the Children of the Net" (2012) [Pl. "My, Dzieci Sieci"], which just after its publication, was claimed by the media as the digital generation manifesto.

The research had a multi-aspect character. In the first project, the following methods were used: the structured interview (with 30 children and their curators, usually parents), netnography, participant observation in school environment and the qualitative and quantitative analysis of the curricula. In the second project, the interview and observation were replaced by the surveys among a representative group of the youth.

Separate research had a common competencies model created by the use of an expert method based on various international MIL recommendations and standards. Competencies described in the model were categorised into three areas: "information literacy behaviours" (use of information), "productive behaviours" (creation of content) and "living in the Internet" (creation of image, net/digital identity). As a result, our project team established its own holistic approach to the research of MIL and MIL education in Poland.

In Poland, the common misconception is that children are "digital natives" with advanced skills and abilities. However, this could not be further from the truth. The basic research conclusions from both projects showed the differences between common understanding of the level of digital literacy of pupils and students and their real knowledge and skills.

Polish pupils and students aged 9-16 do not have the features of "digital natives". The curricula shows that Polish schools are not the environment where children can improve their digital literacy.

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Keywords: *MIL competencies, school, digital literacy, Poland*

Upstairs - Downstairs. The representation of information and media literacy in Icelandic educational legislation, policy documents and in the curricula of Icelandic upper secondary schools

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Objectives: The main aim of this paper to study the representation of media and information literacy (MIL) in the legislation and education policy papers for upper secondary schools in Iceland, in the *National Curriculum Guidelines*, in the curriculum of the different secondary schools and further to consider whether MIL is included in the description of the learning outcomes in the various subject curricula. The main research question is whether there is a link between the presentation of MIL in the policy documents and in its manifestation in school curriculum.

MIL skills are generally considered to be essential competencies for the individual in the information age and a competency worth striving for in all walks of life, including for university studies, for working life and for leisure activities. In this paper we draw upon several sources of policy guidance about information literacy. According to the *Moscow Declaration on Media and Information Literacy* (MIL) the definition is as follows: "A combination of knowledge, attitudes, skills, and practices required to access, analyse, evaluate, use, produce and communicate information and knowledge in creative, legal and ethical ways that respect human rights" (Moscow Declaration, 2012). Emphasis is placed on the need for MIL to address all types of media and all forms and formats of resources. The theoretical perspective of information literacy and its development is discussed by Sturges & Gastinger, (2010) as is access to information as a human right. Further the *Common Information Literacy Framework Model* in European perspective is introduced (Klingenberg, 2012). Methodology: Content analysis in terms of using the methods of discourse analysis was conducted on the text of the legislation and the government policy documents to examine the representation of MIL. The study also sought to answer the following survey questions, which were sent to upper secondary schools in Iceland, about how MIL literacy is taught in the schools and by whom:

(a) Who is teaching MIL?

(b) In which context is the teaching, for example as special courses or embedded parts of subject courses, or as an integrated part of other courses?

(c) What curriculum is used in the teaching of MIL? Is it in the general *National Curriculum Guidelines* or is there a special school curriculum for the teaching of MIL?

(d) Is MIL included in the description of learning outcomes in the subject curricula?

Outcomes: The main finding of the paper is to compare and give the results of exploring the correlation of the presentation of MIL in the legislation and governmental policy documents on one hand and in the presentation and the programme of the individual schools on the other hand.

Previous research has shown that in Iceland until recently more emphasis was placed on information technology than information literacy. In the educational sector there is now a period of changes concomitant with the implementation of new national guidelines for the upper secondary school in 2015.

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Keywords*: Information literacy, Media and information literacy, Curriculum study, Content analysis, Upper secondary schools, Iceland,*

Developing Information Literacy Policies within States: The Role of Communities of Practice

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In a community of practice (CofP) members share practice, expertise, thoughts and ask questions. The proposal aims to demonstrate the important role (CofPs) can have in developing information literacy (IL) policies and practices within states.

There are broadly three options for the development of IL policies within a national agency; leadership by a professional body; and a community of practice.

A national agency is clearly the preferred option but it needs staffing, funding and sustainability. Leadership by a professional body is a reasonable option but professional bodies have a wide range of issues to deal with and IL has to compete with other priorities. A CofP is a cheap and fairly simple method but it must integrate and work with national strategic priorities.

While IL policy development should appeal to major international policy statements such as the *Alexandria Proclamation* and the IFLA *Media and Information Literacy Recommendations* formal state recognition of these documents is frequently lacking and it is often necessary to build on procedures emanating from various information initiatives within the information community.

The Right Information: Information Skills for a 21st Century Scotland is a community of practice which grew out of the now concluded Scottish Information Literacy Project which ran from 2004 to 2010. During the time of the project, numerous partnerships and collaborations were formed and the core activists felt that networks and activities had been created which were too valuable to abandon. This led, in June 2012, to the launch of the CofP with the following aims:

- Developing core information literacy skills in further education
- Assessing the impact of information literacy training
- Advocacy for information literacy
- Instructing teachers in information literacy
- Promoting information literacy as an employability skill
- Developing information literacy toolkits for young people
- Teaching information literacy skills in public libraries
- Developing links between schools and public libraries
- Use of electronic information literacy resources in public libraries
- Developing online training packages in higher education
- Developing workplace information literacy skills

One of the strengths of the CofP is that it brings together information professionals from a range of sectors such as school, public and higher education that would otherwise have little contact with each other. Members are now also being recruited from outside the information profession. The CofP also works with the two professional bodies in Scotland, the Chartered Institute of Library and Information Professionals in Scotland (CILIPS) and the Scottish Library and Information Council (SLIC) which advises the Scottish Government on information policy. Members contribute to the community's knowledge of information literacy activities, contribute case studies, news, present at conferences and events and engage in research and the development of new training products. Most interaction is online (URL http://scotinfolit.squarespace.com/) but face to face meetings are held twice a year.

The presentation will include a short advocacy case study illustrating how the CofP influenced a major report on digital participation published by the Royal Society of Edinburgh.

Keywords: *The Right Information, information literacy, communities of practice, Scotland*

Raising Policy Awareness About Scientific Information Literacy in the European Research Area: A First Set of Options

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In the current political and cultural climate, the role of Scientific Research is conceived in the context of the Knowledge Economy paradigm, where improving knowledge circulation and use constitute obviously crucial goals.

One major imperative underpinning this rationale is "Improving access to scientific information", a challenge so far addressed within the scope of the Open Access (OA) movement, focused on new publishing models relating to scholarly journal literature, and to a still limited extent, monographs. But significantly improving access to scientific information requires a broader perspective than that which has so far been provided by the OA approach.

The paper will therefore consider the goal of improved access in a wider context:

(i) from the point of view of all users of scientific results, not just researchers;
(ii) for every form of scientific output: for instance, research data, patents, research infrastructures, prototypes, in addition to the traditional scholarly literature.

Such a wider view is rooted in the European Commission's policy view on OA, conceived as "*The policy and practice of granting immediate and free internet access to scientific results (including peer-reviewed journal articles*)" (EC, 2012a), as well as on the different aspects of access, as theorised in the specialized literature (Buckland, 1988 – six aspects of access).

The ability and capacity of individuals to secure this sort of access, and to be aware of the means of gaining access, is an important component of "Scientific Information Literacy" (SIL), the focus of this paper.

Moving from the analysis of a selected set of policy documents released since 2007 by the European Commission on Scientific Information in the European Research Area, the paper will show that Scientific Information Literacy is a neglected issue. The paper will also demonstrate that the education and training of researchers and other stakeholders in the research and innovation sphere, to ensure that they have appropriate levels of SIL, is a need that should be mainstreamed in EC policies. This is important also to maximize the impact of public investments in research not only for science, but - even more - for innovation.

There is a real challenge in achieving such mainstreaming. The paper will propose how the attaining of OA objectives might serve as a vehicle for demonstrating the relevance and importance of SIL as a policy issue. It will also explore how networking organisations such as the European Network for Information Literacy (EnIL) and, in the UK, the Research Information and Digital Literacies Coalition (RIDLs), can help to influence the policy agenda by capitalizing on the outlooks of the different communities that they represent.

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Keywords: *Scientific information literacy, European policies, open access, research and innovation*

Information Literacy as a Right and a Duty

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The aim of this paper is to briefly review the strategic steps which have been taken in the area of education for information literacy (IL) in the Czech Republic - focusing mainly on the higher education level, but with additional references and applications to lower educational levels as well. The paper also aims to look a bit deeply into the broader, fundamental "right to literacy," in relation to human rights and public duties in general, and which are very often guaranteed by national constitutions, such as the right to education, the right to access (public) information, and the (public) duty to protect weaker parties in certain kinds of legal negotiations in countries such as the Czech Republic.

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Keywords: *literacy, information literacy, education, access to information, human rights, Czech Republic, public policy, rights, duties*

Information Literacy Skills of Portuguese LIS Students: Some Topics on Evaluation of Resources Credibility

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This proposal focuses on the Portuguese results from an international survey on LIS students' information literacy skills. The International Information Literacy Survey was supervised by the Department of Information Science at Hacettepe University of Ankara, and the Portuguese study has been conducted by the Information Science Department at the School of Industrial Studies and Management from Polytechnic Institute of Porto. The survey was sent by e-mail to all the 65 undergraduate students of our department. Fifty-three responses were collected, of which five were incomplete. Only the 48 complete questionnaires were analysed for this communication proposal. Data were collected through an online questionnaire available between March and May 2013. This data collection instrument had 16 closed questions and one open for comments. Generic data to characterize the respondents and specific data about their information practices were collected. Thus, self-reported data were collected among LIS students regarding their research experience, information behavior and information literacy skills.

After a brief overall presentation of the main results, the analysis will focus on issues related to information evaluation skills, namely on criteria to asses information credibility and on difficulties to apply them. The use of aspects such as the currency of the sources, the presence of the author's credentials, whether the content acknowledges different viewpoints, whether the author gives credit for using someone else's ideas (references, footnotes, links) will be checked, among others, regarding sources available in the library (books or articles from library database) and sources available "out on the web". These Portuguese results will be compared and discussed with the data on the same topics collected with the same survey instrument in other countries (Grgic & Špiranec, 2013; Krakowska, 2013). This analysis of the results will be grounded on a review of guidelines for the evaluation of information, especially the credibility aspect, on three main information literacy frameworks (Australian, 2004; Information, 2000; SCONUL, 2011). The results will also be compared with studies on the application of criteria to evaluate information and determine the credibility by undergraduate students. According to the literature, when student were asked how they evaluate information on the Internet they use a variety of strategies (Currie, Devlin, Emde & Graves, 2009) such as searching for authorship, currency or URL, among others. Other studies (Dochterman & Stamp, 2010; Hung, 2004) consider that students did not use all the necessary criteria for evaluating sources for a research paper.

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Keywords: *Information literacy, information evaluation, information credibility, LIS students, Portugal*

Moving Canada Forward: Information Literacy in a Time of Indigenization

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*Objective*s

Building on the work of Kapitzke (2003) this paper challenges the signature discourse of information literacy and its presumed neutrality in schools and teacher education in post-colonial societies such as Canada. The paper argues that while operating under the guise of neutrality, information literacy in Canada has acted primarily in the interest of neo-liberal education and has tended to subjugate and exclude information and knowledge about the realities of colonialism and its impact on indigenous peoples.

As a way of moving Canada forward, the Council of Ministers of Education, Canada (CMEC, 2013) called for action "to address the painful legacy of residential schools by ensuring that curriculum in all provincial and territorial school systems will allow students to gain an understanding of how residential schools affected Aboriginal children, families, and communities and, ultimately, the country as a whole." With this, Canada's ministers of Education signalled the need for a counterdiscursive strategy against colonialist, neo-liberal education and toward the indigenization of information in schools and in society.

This paper is based on recent research that engaged the author in a critical self-study about the journey of indigenizing her teaching in an effort to explicitly respond to institutional, as well as directions from those responsible for Canada's educational systems. The study critically historicized and politicized text creation, selection, interpretation and use across a variety of information sources.

Methodology

Along with indigenous methodologies (Kovach, 2007), the study employed the methodological components of self-study research (Samaras, 2011). It was: (1) a personal situated inquiry, (2) critical collaborative inquiry, (3) aimed at improved learning, (4) transparent and systematic research process and (5) inquiry focused on knowledge generation and presentation (Samaras, 2011, p. 10-11).

Outcomes

Using frameworks such as red pedagogy (Grande, 2004) and Tribal critical theory (Brayboy, the study identified a number of effective approaches and actions that can be taken at the micro, meso, and macro levels of education to enact information literacy practices that are critical and anti-oppressive in order to move toward greater social justice and equity for all. The paper illustrates that Canada's process of indigenization has implications for information creators and users—curriculum constructors, teachers, students, and societies given the ongoing, global impact of colonialism and neo-colonialism around the world.

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Keywords: Indigenization, colonization, critical information literacies.

Planning Strategy for IL Training: Montenegro Case

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Objectives

Contrary to media literacy, information literacy is rarely mentioned. There is confusion between computer and information literacy, due to the alliterative closeness of those words in Montenegrin. Therefore, one may say that it is not well known what information literacy actually is.

The National Library of Montenegro „Đurđe Crnojević“ is obliged by law to monitor and improve the work of Montenegrin libraries as a whole, and to introduce new professional concepts and practices. It decided to familiarise the library community, as well as the educational sector and society in general, with the importance and practices of IL. The national library aims to produce a model for intersectoral co-operaton, too.

Methodology

After carefully studying foreign experiences and our own past projects, we decided to start from the top, with institutions that possess mechanisms for implementation of IL programmes. Since we are dealing with libraries of different types that belong to various sectors, the National UNESCO commission seemed a good first stop for two reasons: because of IFAP that directly deals with our topic of interest, and because its activities are cross-sectoral.

After the initial presentation for representatives of relevant ministries that was organised in collaboration with the National UNESCO Commission, the National Library simultaneously acts in three directions:

- towards goverment entities; on the basis of respective laws, rulebooks and strategies we produced proposals for each of them, on how to join and contribute. We respected specific interests of each sector, its goals and objectives, as well as its organisational scheme.
- towards libraries; in accordance with our human and other capacities, we decided to start with public and school libraries. Initial presentations, TTT sessions and workshops for users and stakeholders are planned to take place throughout the country.
- towards UNESCO and other international organisations; joining relevant associations, taking part in thematic projects and bringing foreign experts for lectures, workshops and discussions.

The paper describes the history and reports on current activities within this initiative.

Outcomes

This is a work in progress and desired outcomes are: increased general knowledge about the nature and importance of information literate pupils and citizens, and development of new practices and services within school and public llibraries in Montenegro. In the area of intersectoral co-operation we hope to raise awareness about its benefits and to introduce a model for collaboraton across professions, because it is not a common practice in the country.

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***Keywords**: Information literacy, promotion, Montenegro*

Online or Print: Which do Students Prefer

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Among the indicators of information literacy is the ability to synthesize information and construct new concepts. Reading comprehension – the ability to process and understand a text's meaning – is vital to this skill. Many studies indicate that the format in which a text is read, i.e. electronic or print, can impact comprehension. For scanning headlines or reading short passages, electronic formats are sufficient (Miedema, 2009). But properly learning and internalizing a text, such as academic readings for coursework, requires more focused concentration and deeper reading skills. Print format apparently still enables this skill best (e.g. Mangen, et.al., 2013). Librarians and educators are in the position of making important decisions about the format of the information we provide to our students for their academic needs. Considerations are made for convenience, ease of access, technological trends, and economic feasibility. Instructors often dislike forcing their students to purchase or use expensive books, but question the pedagogical effectiveness of posting all course readings on their web page. What do the students think? Do they feel that reading formats impact their learning? Do they express a preference for one format over another? Does context influence those preferences?

This paper reports on a study of students' academic reading format preferences and behaviors performed in Spring 2014. Over 300 undergraduates at UCLA completed the Academic Reading Questionnaire (ARQ), an online survey of 22 questions – 14 Likert-style, and 8 demographic –answering questions such as: *It is more convenient to read my assigned readings electronically than to read them in print; I prefer electronic textbooks over print textbooks; I usually highlight and notate my printed course readings;* and, *I can focus on the material better when I read it in print.* Results support a small body of literature showing undergraduates' tendency to prefer print materials over electronic for learning and academic needs. Demographic factors – age, year of study, and major – and information about the devices used for online reading help identify patterns of behavior among the student population.

This is a follow-up to an ethnographic study I performed in 2009 with 41 participants on their academic information management behaviors (Mizrachi, 2010). Most students then stated that they like the convenience of electronic access to their academic readings, but felt they learned the material better when they read it in print. If they had a viable format choice, most preferred print. This current study expands upon that finding with a much larger sample population, and considers the technological advances that have since occurred. Results will be of interest to librarians, educators, and technology policy makers. The simplicity of the questionnaire makes it a viable instrument for use by researchers in other language communities and cultures.

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Keywords: *Print reading, electronic reading, academic reading, reading format preferences, college students*

Information Literacy and Drama academics

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The information practices of academics supporting the teaching of theatre and drama subjects were investigated at a UK university to discover how they relate to information in their teaching and research. Using semi-structured interviews to gather data, all the academics within the relevant university department discussed issues around their information literacy behaviours. These twelve academics were recorded discussing issues such as how they search for information, make notes, organise information both for their own research and their teaching, which included filtering information into appropriate forms for undergraduates. The academics included technical specialists, who may have worked in theatre for many years before returning to academia, as well as more traditional theoretical academics with international experience.

They were given a general definition of information literacy before being interviewed to give an overview of how librarians may see information literacy, but the interviews were wide ranging and only loosely structured to extract the information that the interviewees saw as most relevant. The definition they were given was:

"The ability to identify, assess, retrieve, evaluate, adapt, organise and communicate information within an iterative context of review and reflection." JISC iSkills (JISC, 2005).

The interviews resulted in 16 hours and 32 minutes of recorded data which was transcribed and analysed using a grounded theory approach. Codes emerged over several iterations that described areas that interviewees seemed to see as important, as interpreted by the researchers. These were grouped into wider areas, such as "searching", "reading", "organising", "note taking", "types of information", "links between experience and practice", "acting versus technical theatre", and more.

The theoretical background of the researchers has much in sympathy with the experiential or relational approaches of Information Literacy, and as such this paper explores the richness of information literacy behaviour in drama academics, without using prior Information Literacy models to analyse the data. It is recognised that variation in practice and context dependent behaviours are core to these approaches and as such, these are explored and described.

This paper concentrates on a discrete number of themes identified during the analysis. That is, how the academics interviewed search for information, extract that information for teaching and research, and organise it for future use. Patterns of behaviour emerged from these interviews, which are presented here. They will be used by the researchers to inform their own teaching practice and provision of library services within their university. Similar behaviours are expected to be exhibited by other groups of subject specialists, especially within the creative industries, and some transferable information from the analysis of these interviews is expected to be of use in other institutional and subject contexts.

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Keywords: *Drama, relational information literacy, experiential information literacy, qualitative research*

Digital Literacy as a Prerequisite for Achieving Good Academic Performance

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Digital literacy is defined as the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills (ALA). This definition assumes possession of a wide range of technological, cognitive and social competences including "the ability to operate computers and navigate the net effectively, to cope with large volumes of information, to evaluate the reliability of information, and to critically assess what seem to be natural (and not ideologically biased) technological tools" (Eshet-Alkalai & Soffer, 2012, p. 1). In some countries, term ICT is added to the concept of digital literacy resulting in digital ICT literacy: it is "the ability of individuals to use ICT appropriately to access, manage, integrate and evaluate information, develop new understandings, and communicate with others in order to participate effectively in society" (Australian Curriculum, Assessment and Reporting Authority, 2012). Digital literacy assumes wide range of communication forms, "from relatively simple communication via email or instant messaging to more complex forms of scholarship that involve sourcing using, evaluating, analysing, aggregating, recombining, creating and releasing knowledge online" (Littlejohn, Beetham & McGill, 2012, p. 547). Digital literacy is important because it represents "a keystone for civic engagement, educational success, and economic growth and innovation" (Clark & Visser, 2011, p. 39). It is also a vital topic at all levels of education including higher education. Nowadays, the learning process includes all sorts of electronic devices which aim to support access and use of digital information resources. This fact makes the organization of the learning process even more demanding. Students are getting more experienced in the use of digital devices as they advance in their education. New generations of freshmen bring to their studies experience of using different technologies including many flavors of internet services. Use of digital devices and networked information resources are changing educational and research practices at universities helping students to get involved in learning and research more actively in ways which are more attractive to them. Such activities carry potential to change still existing conventional literacy practices of the academy, as "(…) today's students are engaging with digital texts (texting, online chat, web browsing, social networking and video sites, downloading music) in ways that may seem far removed from the more conventional literacy demands of university study" (Lean & Jones, 2011, pp. 377-378). Having this in mind, this paper will focus on students' understanding of digital literacy and selected aspects of their use of digital technologies in their university study for access to information resources and organization of information and knowledge. The objective of this study is to get an insight into current developments related to digital literacy and selected aspects of use of digital technology by students at the Faculty of Humanities and Social Sciences in Zagreb, Croatia. A survey will be used as the research method as it is the most appropriate and the cheapest tool for this purpose. The results of this research will be used for the improvement of current and the development of future university courses.

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Keywords: *Digital literacy, digital technology, academic community, Croatia*

Reception and Application of Information Literacy Instruction in Portuguese Academic Libraries

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Information literacy has been a challenge for academic libraries in Portugal, for the past decade. Lately, all over the country, academic library professionals have been providing a consistent foundation for both teaching sessions and guidance for students. In this article a systematic literature is used, in an attempt "to identify, appraise and synthesize all the empirical evidence that meets pre-specified eligibility criteria to answer a given research question" (Higgins & Green, 2011). The aim is therefore to make a review that seeks to systematize the state of knowledge about information literacy instruction, trying to answer the research question: how is literacy instruction conducted and achieved in Portugal? The research was carried out via several databases of full text records and in the national scientific repository (RCAPP). The articles found met search criteria that included all of the following keywords: university libraries, users, instructional programs and information literacy. A content analysis was carried out, with the focus on experiential practices on the training of users in university libraries in Portugal: the programs for instructional training which address information literacy, held by librarians and published in specialty journals/resources, available on-line. The objective was to achieve an overview of the practices of information literacy instructional training in a south European country. Two conclusions emerge: one regards the recommendations of the librarians, who focus on the need to get to know the users better, so as to better correspond to their informational needs; the other finds that the training provided by Portuguese librarians at the higher education level is mainly focused on the technical aspects (Mech & MacGabe, 1998) of search and information retrieval, while the processing and communication of such information is rarely explored in this kind of training, although the international orientation guidelines recommend that all the competences in the frame of information literacy are addressed. The overall contribution to the field of IL is mainly a focus on the state of the art of information literacy instruction in Portugal.

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Keywords: *Academic libraries, Information literacy training, Portuguese university libraries*

Narratives of information literacy in South African township schools

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Background

South Africa is struggling with low literacy levels, as much of the population has no tradition of reading or a reading culture. Many homes have few or no books. Schools are now responsible for most learners' main literacy experiences, but they often do not have functional school libraries or school librarians. Teachers in South Africa work against a background of continuing problems with reading and literacy levels, without the necessary resources such as books and school libraries, and are at the same time expected to address the new needs of digital education. A concomitant factor is that many teachers do not understand the importance of libraries, books, reading and information. This results in poor information literacy skills of both teachers and learners. The Academic Literacy Unit (ALRU) at the University of South Africa promotes and supports the attainment of academic literacy through research and community programmes. As part of an integrated longitudinal reading and literacy study in schools in deprived communities, ALRU set up school libraries in various primary schools. The presenters participated in these projects and researched various facets that affect and influence reading, literacy and information literacy, including access to books and functional school libraries with active school librarians. They are currently monitoring two of the school libraries in a post-project phase and this paper will focus specifically on these schools.

Objectives

A holistic, general definition of information literacy adopted by the Alexandria Proclamation (2005) is to "empower people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals". This includes *inter alia* the goal of lifelong learning and education. The primary objective of this paper is to report on the information literacy awareness of learners, teachers and school librarians after a literacy intervention in order to develop a training programme for the school librarians, so that they can become information literacy guides for the teachers and the learners.

Methodology

The study used both qualitative and quantitative methodologies, data collection and analysis. Data collection methods include observations at the schools, text analysis of book reports and library reports, interviews with the school librarians and questionnaires completed by teachers.

Outcomes

This paper discusses the development of a special training programme for school librarians in an information- and print-poor community, based on the findings that were obtained during the literacy intervention. It identifies features that should be included in such a programme in order to improve information literacy delivery at the schools in innovative ways that would find resonance in developing countries.

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Keywords: *Information literacy, School libraries, High poverty schools, Literacy*

From Green Libraries to Green Information Literacy

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The "Green Library Movement" emerged in the early 1990s and is concerned mainly with reducing libraries' environmental impact. It is comprised of "building green library buildings, greening existing library facilities, providing green library services, and embracing environmentally supportive and sustainable practices within the library" (Antonelli, 2008). Green libraries are environmentally conscious. They adopt green practices such as recycling and using enviromentally friendly cleaning products, and help their users and communities to become green and sustainable by providing accurate information on enviromental issues such as green transportation, renewable energy options, alternative building practices, and food security (Fourie, 2012; Mulford & Himmel, 2009). The amount of information available on green libraries and green library practices seems to be growing. However, very little has been written about how information literacy can contribute to this greening trend. The aim of this paper is to discuss how information literacy instruction can embrace sustainability and contribute to the green library movement. With this aim, relevant recent and past publications have been analysed. Based on an indepth literature review, a multi faceted approache towards environmentally sustainable information literacy instruction is presented and conclusions and recommendations are drawn for practice and further studies. Greening information literacy instruction is two-fold. The first can be seen in relation to providing green services. It is about using resources (materials and energy) prudently and reducing the amount of greenhouse gases produced during instructional activities. The second is about embedding sustainability into information literacy instruction. It is about teaching users how to go green while searching, selecting, using and communicating information. According to Stark (2011), information literacy instruction is a good opportunity for libraries to help users shift their thinking towards sustainability. This can be carried out by describing energy usage, such as the amount of CO2 emission generated by a Google search, and drawing attention to the environmental impact of their information behaviors and actions. It could help users to develop a sustainable attitude in their information literacy actions if they know that "the Internet's energy and carbon footprints now probably exceed those of air travel" (Owen, 2010). The environmental impact of paper vs digital sources, the use of information and communication technologies, and computer searches can be referred in information literacy instruction programs. This will, no doubt, increase the awareness and motivation of users to act responsibly in all activities where they use their information literacy skills.

Moreover, improved information literacy skills as an outcome of an information literacy instruction will have a positive indirect impact on the environment whether or not sustainability is intentionally focused and/or embedded into the program, because advanced search skills will help to develop better search strategies, which, in turn, will bring better results in a shorter time span, and hence leave a smaller carbon footprint. We can conclude that greening information literacy initiatives can contribute in many ways to the creation of a greener environment, and should be seen as an important component of the Green Library Movement.

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Keywords: *Green libraries, green information literacy, environmentalism, sustainability, sustainability literacy*

Teaching Teachers: A Study of Factors Impacting the Information Literacy of Teacher Education Students

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Information literacy—the ability "to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information"—has been widely and increasingly cited as an essential competency for college success, for the workplace, and for life. For college students preparing to become teachers, proficiency with these skills becomes even more important given their future role as facilitators of student learning. Nonetheless, research has shown that beginning pre-kindergarten to twelfth grade (PK-12) teachers often lack the information literacy skills and knowledge required for their work. Over the course of the 2013-2014 academic year, the researchers measured the information literacy competency of 152 teacher education majors using the iSkills test, an assessment of ICT literacy skills developed by the Educational Testing Service (ETS). Aligned with the Association of College and Research Libraries (ACRL) Information Literacy Competency Standards for Higher Education, this 60-minute test requires students to complete 14 scenario-based tasks which assess competency with information in seven areas: define, access, evaluate, manage, integrate, create and communicate. The purpose of this study was threefold: to assess the accuracy and usability of the iSkills test in assessing ICT literacy among students preparing to be teachers; to assess the information literacy skills of students within the College of Education at the University of Nevada, Las Vegas; and to determine student demographic and academic characteristics (specifically, gender, race/ethnicity, cumulative grade point average, and course completion) that may predict success on the iSkills test. The sample consists of 21.7% of the students majoring in Teaching and Learning, the academic program which provides undergraduate degrees in elementary and secondary education; all participants in the sample are in the second half of their degree programs. In addition to completing the iSkills assessment, participants completed a demographic survey and provided access to demographic and academic data. A subset of students participated in focus groups, which elaborated on student experiences with information literacy within their teacher education curriculum. The authors will report on demographic and academic characteristics that may predict success on the iSkills test, educational experiences that may facilitate the acquisition of information literacy skills for future teachers, and student perspectives on how they will utilize these skills in their future careers as teachers.

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Keywords: *ICT literacy, information literacy, iSkills, teacher education*

Professors' Influence on Students' Choice of the Format of Research Materials: Are There Differences between the Academic Disciplines?

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The aim of this research is to determine professors' influence on students' choice when it comes to the format of research materials they use, as well as to determine possible differences between humanities and social science students with regard to the type and format of research materials they use in their master theses. The results of the study conducted among the younger generations of students (Liu, 2006; Williams & Rowlands, 2007) indicate their preference for digital sources. However, a study of humanities students (Barett, 2005) indicates their inclination toward print sources. This leads to a possible contradiction – the *net* generation behaviour and usage of print sources. The transition of the information source format used, from print to digital, differs for each discipline (Siebenberg, Galbraith & Brady, 2004). This paper will demonstrate the influence professors have on students' choice. Our research questions are as follows: What format do professors prefer and suggest to students? Are professors aware of the students' preference for digital formats? Is there a difference in preference of format between humanities students and social sciences students? Two methods are used in this study. Content analysis was conducted on 30 master theses in History and 30 master theses in Sociology, all defended at the Faculty of Social Sciences and Humanities in Split (Croatia). The survey questionnaire was given to 16 social sciences and to 16 humanities professors in order to determine their preferences for material format and to find out which material format they require of or suggest to students. An additional purpose of this pilot study is to test the methodology which will be used in the large scale study, because it is questionable whether the results of the above mentioned content analysis and questionnaire are sufficient for obtaining significant findings, or whether some other research methods are needed. Our results indicate that information behaviour and information literacy competencies should be observed through the prism of disciplinary differences and their characteristics and that professors' expectations and suggestions influence the students' choice of format and type of materials they use in their Master theses. These findings can only be applied to the participants of this study and further research in more scientific disciplines and on a larger scale is needed to verify them.

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Keywords: *Format of information sources, humanities students, social science students, information behavior, information literacy*

The Effects of Integrating Information Literacy Instruction into Inquiry Learning: A Longitudinal Study

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Information literacy is the ability to recognize, locate, evaluate, use, and create effectively the need information (AASL & AECT, 1998; Andretta, 2005). Many studies found that information literacy education should be integrated across the contexts of school curriculum, through inquiry learning (Chen, 2013; Eisenberg, Lower & Spitzer, 2004; Kuhlthau, Maniotes & Caspari, 2007; Rockman, 2004). Inquiry learning facilitated better knowledge application and reasoning skills, but performed less well in basic or factual knowledge acquisition than traditional curriculum (Strobel & Barneveld, 2009; Wolf & Eraser, 2008). Studies also found that students of different academic achievements may perform differently in integrated information literacy instruction (Chu, 2009; Cuevas, Lee, Hart & Deaktor, 2005; Todd, 1995). However, the above mentioned studies were conducted in a short term; few studies investigated the effects of inquiry-based integrated information literacy instruction in a longer period of time.

Thus, the purpose of this study was to examine the effects of four-year integrated information literacy instruction on elementary students' comprehension of subject contents through inquiry learning. Moderating factors of students' academic achievements was another focus of this study. The subjects were 72 students who have participated in this study since they entered an elementary school. This elementary school adopted the information literacy instruction and integrated it into various subject matters via the framework of inquiry learning, such as Super 3 and Big6 models. A series of inquiry-based integrated learning information literacy instruction has been implemented since the second semester of first grade. A total of seven inquiry learning projects have been implemented from grade one through grade four. Seven instruments were used as pretests and posttests to assess students' concept understanding of subject contents in different projects. The results showed that inquiry-based integrated information literacy instruction could help students from grade one through grade four grasp and apply the new concepts of subject contents. Regardless of academic achievements, if students would like to devote their efforts to inquiry processes, their conceptual understanding of subject contents improved effectively. However, students of low-academic achievement might need more time to be familiar with the inquiry-based learning strategy.

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Keywords: *Information literacy instruction, inquiry-based learning, academic achievement, longitudinal study*

Development of Visual Skills: Digital Photography as a Tool for Research and Teaching in Architectural Education

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An architect's education requires a broad mastery of visual skills. Particularly in design courses, students must demonstrate the skills necessary for the use and production of images to achieve a competitive academic performance. However, the development of these skills in students and the evaluation of their work by faculty members are based mostly on subjective criteria supported by the faculty's experience. Seldom are pedagogical practices considered within the hegemony of the workshop culture and the architectural design process. The objective to the research is to validate photograph in architectural education, as a research tool in the study of urban landscape, as well as, an object of research to understand the processes of learning in architectural design. The research used digital photography, as an appropriate instrument of teaching to develop visual thinking, needed by any student of architecture and as a mean to facilitate teaching. The research is based on experience and analyzes the processes of teaching - learning mediated by visual artistic products, specifically for: make a diagnosis of the level the first-year design students in terms of the image production; analyze the production and post-production of images taken in a place]; and, analyze the visual results in the identification of problems throughout the design process.

The development of visual competencies was conducted in the course *Design Fundamentals*, first year of college. The paper charts how we studied the experiences of the students at the beginning of their training as architects, specifically, of the photographic activity of students when they interact with a place for the understanding of the architectural space and the identification of problematic situations during the design process. A rubric was distributed which included the following elements: General Image, Cinema Conventions in Photography, Visual Narratives, and Design Process. The goal is that the results of this experiment will help to establish new educational strategies for the development of visual skills to be used during the design process.The collaboration between faculty members and librarians of the School of Architecture at the University of Puerto Rico presented new partnerships that have enriched the planning process of different pedagogical activities for the advancement of knowledge with the development of visual literacy skills in students. This process is addressed by the Visual Literacy Competency Standards for Higher Education, published by the Association of College and Research Libraries, specifically by Standard Six: The visually literate student designs and creates meaningful images and visual media. As a result, outcomes are established as a function of the student's capacity of creating photographic images using aesthetics and design choices to enhance effective representation and communication of concepts, narratives and arguments arising from the analysis of a place, and in turn, this visual product will be a useful tool for the definition of problems in the design process, which, in the context of architectural teaching – learning process, has value for both students and instructors.

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Keywords: *visual skills, digital photography, architectural education, visual methodologies, architectural design process, urban landscape.*

Sharpening of Little Quill Pen: Research on MIL in primary schools

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Objectives

Sharp Little Quill Pen is a project of the Association of School Librarians of Serbia on improving MIL in primary and secondary schools. The main target group is pupils, but teachers and librarians are also involved. This project commenced four years ago and in the meantime there were introduced initiatives to subject curricula that allow teachers to incorporate MIL elements in various subjects and to develop intercurricular competences (Ministarstvo prosvete, nauke i tehnološkog razvoja, 2012). Therefore the authors decided to conduct a research in order to check if the Quill project needed modifications or changes. The project also explored the authors' notion that information literacy dimension is generally less represented and practiced than the media literacy one (Walsh, 2011). Therefore it was neccessary to determine current level and characteristics of IL among the target population and to decide which IL elements to add to future project activities. The aim of this research is not to defend a completely new hypothesis, but to support anecdotal knowledge with empirical data and to enable informed decision making. It is done in order to gain reliable information on which to base findings that can be used in negotiating and organizing joined and co-operative activities of school librarians and teachers on a day-to-day basis.

Methodology

Answers from two different specially designed surveys of information seeking and usage practices and media usage behaviour, one for pupils (200 respondents) and the other for teachers and librarians (50 respondents), were processed and analysed, and the results presented to appropriate educatonal and schools authorities to be taken into account when planning future activities of Sharp Little Quill Pen. The data was analysed and judged from the point of vertical and horizontal connectivity of different subjects.

Outcomes

The desired outcomes were twofold: a) improvement and fine tuning of content and activities of the project in order to offer more attractive and useful MIL education and to increase number of participating schools, and b) communication of findings of survey and of conclusions and sugestions based upon them to school libraians' and teachers' communities, and to schools and educational authorities in order to improve embedding of MIL elements into subject curricula (Nacionalni prosvetni savet, 2013) and to increase their horizontal and vertical connectivity during eight-years educational cycle.

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Keywords: information and media literacy projects, primary education, Serbia

Collective immersion in future profession as an interactive media education technology

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The way that interactive learning is organized allows almost all participants to have the opportunity to be involved in the learning process. The technology also allows for interactive learning methods in a system of mutual influences for teachers and students in various forms of training and this ensures effective cognitive communication. These conditions enable the enrichment of motivation, intellectual and emotional experiences, and vocational and other outcomes. Usually this occurs in a friendly atmosphere, which contributes not only to the acquisition of new knowledge, but also stimulates and develops cognitive activity.Interactive training as a form of educational process optimizes the nature, content and structure of teaching influence. The researchers emphasize that during these sessions, the participants learn to think critically, to solve complex problems by analyzing the circumstances and relevant information, analyze alternative views, make decisions, discuss and communicate with interesting personalities.

Nowadays when the media technologies rapidly develop it is high time to pay attention to their interactivity. An interesting example is the students' festival "Publishing NON STOP" [http://vydnonstop.in.ua/; http://mozhlyvosti.in.ua/festival-vidavnichii-non-stop].This year it was held in Kiev for the third time. The aim of the festival is the professional growth of novice journalists, specialists in publishing and editing, meetings and contacts between students of this trend in Ukraine. The slogan "48 hours of drive!" emphasizes the concept of the event, because for two days various performances and events are held.

United notion of "festival" action consists of several "genres". They are lectures, meetings with well-known industry experts, round tables, work shops, students' presentations and websites, periodicals, various contests, book crossings, exhibitions and concerts. All festival events complement the learning process, professionally enrich and work for the students' future profession, meet their professional needs, satisfy curiosity, orient on the general. Preparation of such a creative forum provides the involvement of all student groups and their lectures.

The program of the festivals is composed and discussed, there are talks with invited participants of the action, develop search and professional activities of students, etc.

It is important for teachers to aim the invited speakers and other participants who are involved in the action to achieve profession oriented educational purposes.

We believe that such profession oriented media-educational measures for collective immersion in the future directions for the profession might be an interesting form of work with students of departments having their own specifics of training, famous personalities, their own teaching and educational purposes.

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Keywords*: media literacy, information literacy, professionally-oriented media education, media competence, interactive technologies of media education, collective immersion.*

Website evaluation of the Croatian tourism libraries in relation to user information literacy

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Information literacy is a precondition for users to independently access, understand and to ask critical questions in complex information environments. With respect to the digital environment of today, the need for the ability to interact with information is accentuated. Since the process of learning is not limited to formal education, but is extended to professional life and leisure time, this article aims to explore how tourism libraries in Croatia, with their contents offered online, respond not only to changes in information literacy of users, but also to changes of the user education needs and changes in lifelong learning.

Tourism has been selected as the area of research because of its great importance for the economy of Croatia (for example, the income from tourism in 2012 amounted to a total of EURO 6,8 billion while it's share in the national GDP amounted to 15.4 %). Tourism is an interdisciplinary phenomenon and its efficacy in economic industry lies to a large degree on scientific researches which rest on the high quality of information. Libraries that organize and offer information and theoretical support are indispensable infrastructure for scientists and researchers of tourism, but also for students, tourism professionals and other who seek tourism information.

Methodology:

In this paper, the website contents of Croatian academic tourism libraries will be analyzed, in terms of user information literacy, user education and lifelong learning. Then, the results will be compared with the results of similar analysis conducted a decade earlier. Based on the results, the paper will try to identify how Croatian tourism libraries respond to the changing needs of the users. Hence, there will be applied desk research of Croatian academic tourism libraries, the methods of description, analysis and comparative method.

Objectives:

The objective of the paper is to explore how Croatian tourism libraries respond to the development and changes in user information literacy, their education needs and lifelong learning, and to identify if any changes occurred in relation to the research done a decade earlier. Also, if any changes occurred, to determine whether these changes contributed to a higher degree of information interactivity and quality of library services.

Keywords: *information literacy, user education, tourism libraries websites, content analysis, Croatia*

International, Collaborative and Online Education of LIS Students – A Step to the Future?

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In this paper, we will analyze and discuss the quality of a project course with an international, collaborative and online format, whose content touches all Swiss information literacy standards. The analysis on a micro-level shall illuminate if the course setup can be declared as a more comprehensive teaching method for LIS students, than the simple teacher- or classroom-centered education. This investigation can be seen as a direct consequence of the Swiss participation in the International Survey about Information Literacy of Library and Information Science students, held by the Information and Documentation Department at Hacettepe University in Ankara, where two important results have been identified: Generally, not all literacy standards are taught. Furthermore, students lack several competences in the field of information literacy.

The aforementioned course was conducted from the end of September 2013 until the middle of December 2013 (in total 12 weeks) in collaboration of the two schools, HDM Stuttgart and the HEG Geneva for the 3rd time in the second year of the Bachelor curriculum. The participating students meet firstly in person and form mixed virtual teams. The teams then select their research topics from current issues of library and media industries, and get introduced to the use of communication and collaboration tools. An additional social program with dinner and a one-day excursion eases the students to get in touch and overcome language barriers. An eight-week intense working phase follows, in which the students choose and use the various kinds of communication and collaboration tools on their own to coordinate the project's progress from their home institutions. Eventually, the virtual teams summarize and visualize their research results on a common dashboard platform. A final workshop is held at the second university where each team presents its research results and the dashboard's functionality.

The evaluation has been done on two levels. On one hand, the interactions between instructor and students were analyzed during the entire project duration (12 weeks), using the indicators of frequency, content, as well as methodological differences between the two schools. At that time, the exchanges between students were studied by taking into account different processes, which are acknowledged to be signs for high performance teams: explicitly effective communication, positive interrelationships, self-reflection, goal setting, and commitment. Students have been qualitatively interviewed by mail at the end of the project about their opinion with respect to the project, the encountered difficulties as well as positive outcomes. By combining the results of these two preliminary evaluations with the quality of the final outcome, first conclusions may be drawn and discussed concerning the quality of the course to assure comprehensive apprenticeship and literacy at every level for LIS students.

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Keywords: *Education of library and information science students, qualitative evaluation, international education, collaborative learning, project course, new learning methods*

Moldovan and Norwegian PhD Students' Information Needs

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In order to achieve the comparability of standards and quality in European higher education there is a need for evaluation and comparisons. This hold true also for PhD training, the third cycle in the educational system. In this paper the authors compare the information needs as articulated by a group of Norwegian and Moldovan PhD-students.

Objective

The objective of the study was to find data to harmonize the online PhD Information Literacy Tutorials in Norway and Moldova. The end result will be to develop a new PhD tutorial for Moldova, based on the Norwegian resource "PhD on Track" while taking into account the differences, difficulties and barriers in accessing, collecting, using and communication of research information for PhD students in the two countries.

Methodology

The Norwegian PhD students were surveyed in focus groups in 2011, along with a group of Danish PhD students, as part of the project Information Management for Knowledge Creation, funded by the Norwegian National Library. The results of the interviews, and of a literature review, have been published in 2013 in the report "PhD Candiates and the Research Process". The library's contribution is authored by Eystein Gullbekk, Tove Rullestad and Maria Carme Torras i Calvo. The authors of this paper used the findings in the report to conduct a similar study of PhD students from the Academy of Economic Studies of Moldova. The Moldovan PhD students were surveyed in focus groups early 2014, and the data are being analysed. These data will inform the development of the web tutorial, comparable to "PhD on Track".

Outcomes

The Norwegian report is part of a project that has led to the establishment of the web resource "PhD on Track,, (phdontrack.net) and of an enhanced understanding of the information needs of PhD students, and how they are radically different from students at lower levels. The Moldovan study will support the knowledge base in the project "Development of New Information Services for Moldovan Higher Economic Education" and will also serve as a point of comparison between Norwegian/Danish and Moldovan PhD students' attitudes to information needs and needs for library services.

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Using Collaborative Teaching and Inquiry-based Learning to Help Elementary School Students Develop Information Literacy and Information Technology Skills

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The purpose of this study is to investigate the effects of an intervention that used a collaborative teaching approach and inquiry-based learning on the development of sixth-grade students' information literacy and information technology skills in Taiwan. A collaborative teaching method involving three teachers in different subject areas was adopted in guiding students through this project for 5 months. The study was based on the models and guidelines created by Kuhlthau (2003), Harada and Yoshina (2004), and Chu (2009). Their research indicated that inquiry-based learning is a more effective mode of learning than the traditional rote learning.

The participants consisted of 23 sixth-grade students, one Teacher Librarian, one Social Studies teacher and one Computer teacher. The instrument included information literacy and IT measurement, and The Student questionnaire of Learning Gains. T-test and percentage analysis were used to collect the data. In addition, qualitative data were obtained from interviews with 3 teachers and 6 students.

Findings of this study are as follows: (a) Three teachers played essential roles in preparing students with information literacy and IT skills through their collaboration and through their instructional content design. (b) The score of students' information literacy and IT skills improved significantly after employing the inquiry-based learning. (c) Students indicated the positive impact of collaborative teaching and inquiry-based learning on the development of their information literacy and IT skills.

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Keywords: *Collaborative teaching, inquiry-based learning, information literacy, information technology*

Information competences – university professors' perspective

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The modern age is characterized by significant technical innovations that have far-reaching impact on the whole society. The constant advancement of information technologies had begun to affect information handling requirements, commonly recognized as information literacy, which has been widely and increasingly cited as an essential competency for educational success, for the workplace, and for life (Behrens, 1994). Contemporary educational systems recognise the need for harmonious development of human being characterized by the development of generic competences as well as the development of specific information competences (Špiranec & Banek Zorica, 2008) focused on identifying, finding and using relevant information (American Library Association, 1989) in order to achieve critical thinking and lifelong learning (Doyle, 1992). With such ambitious aims, information literacy subsumes different 21st century literacies, such as media, computing, networking, digital, science, visual and critical literacy (Mishra & Mishra, 2010). Key factors that will influence how and what kind of information competences are instilled in higher education, apart from librarians, are university professors, students and the world of work. The kinds of competences needed are defined by the world of work, since the ultimate goal of higher educational systems is to prepare students for the labour market. A myriad of literature portraits research conducted among students in order to define information competences they have developed during their studies. Insights from the perspective of university teachers are however rare, although they are an important agent in the development of information competences in higher education. This research is aimed at defining the perspectives of university teachers in the development of information competences among students, by using a list of information competences defined by the Australian and New Zealand Information Literacy Framework (2004). The paper represents the views of university professors on the development of student's information competences during the study itself and the importance of development of information competences for future student's professional work. University professors will evaluate and assess the current development of student's information competences on a scale of 1 (not developed) to 5 (maximum developed) and their importance for future student's work on a scale of 1 (not important) to 5 (most important). The results of the study will contribute to the discussions about the preparedness of students for finding, evaluating, and using information once they graduate and enter the world of work.

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Keywords: information competences, university professors, students, world of work.

Supporting Ethical, Independent Learning Behavior among University Students in the Arabian Gulf

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Students in the Arabian Gulf region and the world over are faced with temptations to plagiarize wittingly or unwittingly due to the multitude of free and easily available electronic sources of information. Rather than developing independent learning skills and academic integrity, students sometimes opt to use companies seeking to make quick money from the inexperienced by offering readymade essays for purchase. They take advantage of students' limited academic writing skills and the fact that students of this generation spend many of their waking hours on the Internet communicating with friends and colleagues on social network sites and sharing information. Instructors at times compound the problem by repeatedly recycling course assignments and tasks. Furthermore, Lancaster and Clarke (2009, p. 147) report that some students contract or outsource work through social networking sites, and have friends or fellow students do the work in the form of contract cheating. Studies have confirmed that academic dishonesty is a serious challenge facing institutions in the region, and working in English as a second language is often cited as a contributing factor to students' plagiarising. While this may be valid, the problem extends to the use of Arabic language sources - our students' first language. As such, efforts are being made to create Arabic plagiarism ~~and similarity~~ detection software (Menai, 2012). McCabe and others (2008) in their study on academic honesty in Lebanon found that most students admitted to participating in academic dishonesty as they plagiarise in one form or another. McCabe's 2009 study of three federal institutions of higher learning in the UAE reported that about 40 percent of students consider cutting and pasting information from the Internet either as not academic dishonesty or as minor cheating (Gulf News 2008). A study by Reza-Khan reported in Gulf News (2012) also found the majority of students plagiarise i.e. 78 percent admitted to involvement in some form of e-cheating, using electronic resources or the Internet, be it in classroom or outside classroom. This paper/presentation discusses how educators in one institution of higher learning in the UAE assist students become independent learners, use information ethically and maintain academic integrity. Concurring with Wheeler and Anderson (2010) who call for appropriate and comprehensive institutional policies and guidelines for dealing with plagiarism, practical examples of the processes and procedures used at this institution will be provided. The population of the study consists of faculty and librarians in an institution of higher learning. The study uses a mixed method research methodology including surveys, document analysis and in-depth interviews as tools for data collection. It consists of a questionnaire with close and open ended questions, and document analyses of the policies and procedures. In-depth interviews of selected faculty are gathered and used to triangulate results of the surveys and documents while capturing educators' voices. Data is presented in simple percentages and verbatim quotations of participants voices to indicate their perceptions and views about academic practices in the institution.

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Keywords*: Academic integrity, independent learning skills, information literacy*

Progress Testing of Information Literacy versus Information Literacy Self-Efficacy in Medical Students

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Introduction

Progress testing (PT) is a common assessment tool within medical schools and for many years PT has been a familiar way of assessing students at the Faculty of Medicine and Health Sciences of Ghent University. In this context, the researchers have introduced a PT on information literacy (PTIL) assessment. Besides answering an item right or wrong, it is also important to analyze students information literacy self-efficacy (ILSE).

Methods

Two independent researchers mapped every PTIL-item to one of the 28-items of the self-efficacy (SE) scale developed by Kurbanoglu (2006). Because of the medical context and the impact on the students' IL the researchers added 10 SE-items to the original scale.

In 2012 all medical students (n=1180) were administered the PTIL and ILSE questionnaire. To evaluate the quality of the question and the mapping with the SE-item, item analysis of MCQs has been executed using SPSS (v22). Furthermore, MWU-tests were performed between each PTIL-item and the mapped Self-Efficacy-item with alpha=0.05.

Results and discussion

Two items had an item difficulty ≤0.2 and four items did not match the curriculum end terms anymore and were left out for further analysis. Even though it is expected that a progressive proportion of answers will be right (Vantini 2008), it has been found that for 6 items more students in the first years answered the items significantly more correct compared to those in the last years.

Generally, looking at the mapping of ILSE and PTIL, for 7 items significant higher SE-values were found for those answering the PTIL-item correctly. Surprisingly, especially in Y1 significant differences have been found: higher SE-values were found for 3 correct answered items and lower SE-values were found for 4 incorrect answered questions. For one item, a correct answer corresponds with lower SE-values. Analyzing this PTIL-item, we can possibly conclude that students deducted the right answer.

Until now, research into the relationship between ILSE and academic performance within a medical context has however been unable to show any relationship (Sattar Khan 2013). Future research should however focus on further validation of the PTIL in relation with ILSE. Future research should also focus on further validation of the PTIL in relation with ILSE. In June 2014, a new elaborated PTIL will be assessed taking into account actual results and the actual curriculum end terms. Simultaneously, an adapted SE-scale for medical context will be developed and further tested.

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***Keywords**: Self-efficacy, Information literacy, Medical curriculum, Higher education, Progress test.*

Health Information Behaviors of Senior Citizens

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Objective

Easy access to health information has created more health awareness among people, resulting in a better understanding of illnesses. However, access to huge amount of health information, particularly through the Web, has also resulted in many challenges such as information overload and inaccuracies, and the inability to separate quality information from the dubious one. One major group of citizens that frequently need quality healthcare information, is senior citizens. The objective of this paper is to analyze available literature on the health information behavior of senior citizens. Unlike previous reviews that predominantly focus on literature from North America, this review includes articles from around the world to understand global trends and perspectives, and prescribes important considerations in advancing the research on health information behavior of senior citizens.

Methodology

Following Zarcadoolas (2005) we define health information behaviors as the wide range of strategies, skills and competencies that senior citizens develop to actively seek out, comprehend, evaluate, and use health information to make informed choices, reduce health risks, and increase the quality of life. A systematic review of literature from 2000 to 2013 was conducted using nine databases, including *PsycINFO, Library Literature & Information Science, Web of Knowledge, Medline, CINHAL, ERIC, Mass Media Complete, Science Direct,* and *Scopus.* This search yielded 212 peer-reviewed research articles. Articles included in the current review conceptualize health information seeking as an active and purposeful activity.

Outcomes

The analyses revealed that much of the previous research has focused on populations in North America, with very few studies on older citizens in Europe, Asia and Middle East. A majority of these studies used non-clinical samples and measured general health information seeking and the related outcomes using cross-sectional study designs. Overall, frequency of information seeking varied by health status and education levels of the subjects. The choice for information seeking channels varied greatly by gender, health status, education, socio-economic status, technology literacy and nature of the information sought. Overtime, there has been a gradual increase in the use of Internet by senior citizens for seeking health information. The major health related outcomes included a more positive health related behavior, active searching for health information, and taking active part in health related decision-making. Shortcomings in the literature include compromised methodological issues of inadequately powered sample size and inadequate reporting of the randomization process. The review also identified three important gaps in the literature that are particularly relevant to Health IL scholars. First is the lack of studies that identified how disease trajectories, and how the changing nature of disease experience changes health information behavior in chronically ill older parents. Second is research that helps us understand information needs that are not met during formal patient-physician encounters, and strategies. Third, much of the work in this area is theoretical and primarily focused on correlating demographic factors with patterns of information behavior. Implications for IL scholars include greater emphasis on conducting theory driven studies, and longitudinal studies that identify how information behavior changes over a period of time and varies by the experience of disease.

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Keywords: *Senior citizens, health information behavior, health information seeking, e-health literacy, health literacy*

Developing a Strategy for Effective Health Information Literacy Instruction Using a Neurocognitive Model for Dual-Processing

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The information revolution has changed our demand for information; it has resulted in the production of an overwhelming amount of information from a variety of sources (Shafi, Gul, & Shah, 2013; Sokoloff, 2013). In the health sciences, today's challenge is supporting new information users to successfully navigate information retrieval tools (Armstrong, 1995; Calvert, 2008). In order to keep up with the evolving technology, it is necessary to develop efficient training modules that exploit the established memory systems in the human brain. Part one of this paper presents a theoretical foundation for the development of such a training module. Part two, implements the proposed model in a health literacy training module in order to demonstrate improved learning outcomes.

The dual-processing model for human learning and memory, conceives differential neural networks for declarative and procedural learning (Mishkin, 1984; Squire, 2004). The declarative memory network is accessed when an individual sees, reads, or hears a stimulus (Willingham, Salidis, & Gabrieli, 2002) declarative learning can therefore be reliably tested using a digit span memory test and an object-naming test (Nelson & Xu, 1995). The procedural memory network is accessed when an individual mimics or follows a process, or acts in a repeatable sequence; procedural learning can thus be reliably tested using a Serial Response Timed Task (Muslimović, Post, Speelman, & Schmand, 2007; Smith & McDowall, 2011). This study tests the effectiveness of an information literacy training module based on the human brain's dual-processing memory networks. Using a pretest-posttest design, the experimental task emulates the use of a website to find target health information. Learning in both the procedural and declarative training conditions is measured through improved accuracy in the posttest as well as task completion time.

The coordinated practical approach to information literacy instruction (ILI) as presented here, simultaneously engages both the awareness and rehearsal of new ILI skills. Basing ILI on neurocognitive dual-processing theory maximizes the impact of information delivery and should be used moving forward for creating health literacy training modules. Although this study focuses on health sciences information, the theoretical framework presented for engaging the dual-processing memory system in information literacy instruction is applicable to other information contexts.

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Keywords: *Information literacy instruction, procedural memory, declarative memory, instructional design, health information literacy*

The Benefits of Integrating Information Literacy Activities into the Higher Education Curriculum of Future Healthcare Professionals

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Introduction

It is often said that Internet users are not information literate at the level they are expected to be. The Information and Communication Technologies (ICT) are currently present in all social spheres and in any activity we undertake. Internet is right now the most used means to search and find information on any field of knowledge, and scientific studies reveal that 8 out of 10 Internet users look for online health information (Fox, 2011). The Internet has become 'the' primary source of information for both patients and health professionals, so it is essential that medical and healthcare students, which are the clinicians and researchers of the future, master information literacy skills. On the one hand these competencies will help them better handle the information and communication challenges that arise in clinical practice, and on the other hand they will contribute to better meet the information needs of patients, who are increasingly requesting for information and caring more about health issues. Since digital education has been revealed as indispensible for improving users' information skills, and the labour market is requesting more and more information literate people, academic structures are the better placed to take over this issue.

Objectives

The aim of the article is to present a picture of the current needs for information literacy skills of students, particularly medical and healthcare students, in the digital age; and to examine how higher education institutions take over this concern.

Methods

An extensive literature review was conducted focusing on the analysis of a wide range of information literacy initiatives in different higher institutions, including medical schools and health sciences universities. This article discusses the elements that make up the concept of information literacy. It addresses aspects such the role of information specialists at higher education institutions, the perceptions of faculty on information literacy, and the positive effects of collaboration between faculty and information specialists on the development of students' information literacy skills. It also highlights the approach that literature suggests as being the most suitable to improve students' information literacy skills: embedding information literacy into the higher education curriculum.

Outcomes

This paper provides a reflection on the benefits of integrating information literacy activities into the academic curriculum of students in medical and health sciences, and on institutional measures that can contribute to the improvement of the information literacy skills of the future health professionals.

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Keywords*: Information literacy skills, online health information, higher education, lifelong learning, continuous learning, transversal knowledge*

Using the I-LEARN Model to Design Information Literacy Instruction

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Given the proliferation of information and the lifelong importance of information literacy and critical thinking skills, instructional designers, school media specialists, and librarians need to determine how to best design information literacy instruction in order to help students locate, evaluate, and use information effectively. This presentation will describe the first experimental research study (Greenwell, 2013) conducted to determine how instruction designed using the I-LEARN model (Neuman, 2011) could increase student understanding and application of information literacy concepts and offer recommendations for future implementations of the model.

A learning model which could be applied in a variety of situations focused in nearly any subject, the I-LEARN model is built upon information science and instructional design theory and practice. In addition to its strong theoretical foundation, what also sets the I-LEARN model apart from others is that its core is information, the building block of all learning, and the model is focused primarily on information use.

The experimental study described in this presentation examined whether information literacy skills instruction designed using the I-LEARN model increased student understanding and application of information literacy concepts as compared to how librarians currently provide information literacy skills instruction. While I-LEARN was developed with K-12 in mind, this study was conducted in seven sections of a required composition course for first year undergraduate students at a mid-sized public university. The experimental group (n=70) received an instruction session and an online library research guide designed using the I-LEARN model, and the control group (n=42) received an instruction session and an online library guide designed using a systems model. The duration of the instruction was limited in that it took the form of the typical one-shot, single class period instruction, though students had access to the online library research guide.

Participants who completed a survey found the instruction to be valuable and a good use of class time. Participants reported that they found the library research guide to be useful, and based upon hits to the guide and self reporting of usage, it appears that most participants used the guide for their assignment. While the analysis of the results of pre- and post-test scores and scores on a citation analysis showed that there was no significant difference between the two groups, it appears that those who received the I-LEARN instruction performed at least as well on their assignments. Students who received the I-LEARN instruction used their research guide more often than students who received the standard instruction, and this warrants further exploration.

Future study of the use of the I-LEARN model is needed, and the presentation will include examples and practical implications for how the model could be implemented in any environment. Specifically the presentation will describe how the model can be used as a framework for developing course guides and online tutorials. Currently the presenter is working with librarians and faculty at other universities to develop new implementations of the I-LEARN model, and the status of these activities will be described in the presentation.

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Keywords: *Instructional design, I-LEARN, instructional technology, course guides, LibGuides, instructional strategies*

From Know That to Know How – Providing New Learning Strategies for Information Literacy Instruction

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Gameful design has become a popular concept in education to increase motivation and engagement among the students (Lee & Hammer, 2011). The application of game elements derived from digital and non-digital games serves as a useful tool to create innovative and interactive learning environments also in the area of information literacy instruction (Smale, 2011; McDevitt, 2011). Therefore the project "The Legend of Zyren" (Knautz, Orszullok & Soubusta, 2013) was initiated to gamify a course on information literacy and provide a new educational environment with a focus on new technologies and dynamic learning structures. The implemented game elements such as story, quests, experience points, levels or achievements correlate with game dynamics that satisfy human desires like reward, self-expression and therefore influence motivation and participation.

The project was separated into three parts consisting of a classical lecture with a focus on information literacy, an online platform on which the students had to acquire the learning content in the form of a text-based adventure and a tutorial where the students had to solve quests in teams (guilds) and apply and intensify their knowledge on information literacy (Knautz, Göretz & Wintermeyer, 2014). This paper focuses on the evaluation of the online platform and the impartation of information literacy with regard to perceived quality (e.g. user-friendliness, usefulness, security/trust and fun) of content, implementation and the general concept of gameful design.

As the project provides a new innovative approach to higher education, conventional evaluation models for didactic concepts were not sufficient to analyze all of the relevant aspects of the proposed approach. For this reason an evaluation model was developed to combine traditional educational factors (e.g. moderation and support by tutors) with typical aspects of gameful design (e.g. quests, achievements, levels). The results of the evaluation confirm the positive effect of the gamified learning environment on motivation and content mastery among the students regarding the acquisition of information literacy. The students were more engaged in the learning content and able to apply the acquired knowledge to solve arising problems. The innovative concept supported creative problem resolution and the development of autonomous learning strategies that supported content mastery and consolidation. Effective knowledge transfer via the platform, as well as the gamified concept in general and the support of the teaching staff in terms of feedback loops were perceived as positive influences on the learning success.

There have been many negative opinions on gamification and gameful design in the past (e.g. Robertson, 2011). However the results prove that the gameful design of the online platform have a positive effect on the student's motivation and their ultimate success in terms of knowledge acquisition. Immediate feedback loops, realized with the help of ICT, enable students to reflect on their state of knowledge in terms of abilities and deficits and improve their strategy in the gamified learning progress. Therefore gameful design can be regarded as an innovative and dynamic teaching method that enforces motivation and content mastery in the area of information literacy.

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Keywords: *Information literacy instruction, knowledge representation, gamification, gameful design, higher education*

Transitions from School to Higher Education: Understanding the Needs of Undergraduates at LSE

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This paper reports on initiatives at London School of Economics (LSE) to better understand the needs of students entering higher education and throughout their undergraduate career. It draws on findings from the Student Ambassadors for Digital Literacy (SADL) project and also reflects on a new information literacy programme of workshops for high school students to help prepare them for higher education. The SADL project (SADL, 2014) was launched in October 2013 and explored the role student ambassadors could play in developing and integrating digital and information literacy into the curriculum. The project sought to address the following questions:

- Is there a value in establishing a Student Ambassadors Network for digital literacies and is there a role for students to act as peer mentors for others on their course?
- What do students already know how to do and what do they struggle with?
- What are the best strategies that can be employed to support students in developing digital and information literacies?

SADL was conceived following a review of student support at LSE (Bell et al 2012) that identified inconsistencies across departments and a lack of co-ordination between support services. It suggested that many undergraduate students had limited opportunities to develop digital and information literacies in the context of their discipline. As a result, LSE Library, Centre for Learning Technology (CLT) and Teaching and Learning Centre (TLC) staff created a Digital and Information Literacy (D&IL) Framework, and launched several initiatives to tackle these issues. SADL was also informed by UK Digital Literacy projects such as CASCADE (Beetham, Dunne, Bailey, & Knight, 2012) that engaged directly with postgraduate students.

The ambassadors attended four workshops during 2013/14 to enhance their digital literacy skills, as well as providing project staff the opportunity to learn about emerging practices from the group. Students were also required to support their peers, share their experiences through blogging and contribute to the development of new resources. The team also explored the research practices of the ambassadors, using a questionnaire developed by Purdy (2013).

At the same time, LSE has been working with a London college to help prepare 16-year-old students for university. A series of workshops were developed for twenty high achieving students studying Philosophy, Politics and Economics. The workshops introduced an academic library; examined types of information; finding and evaluating quality information; managing information and academic writing. The interaction has proved enlightening, will inform our support for new undergraduates, and enable us to improve the first year experience.

Insights gained in devising and delivering engaging and interactive workshops for both projects will be shared. The idea of student involvement in sharing their own digital literacy skills with peers though a network of student ambassadors is new to LSE and the challenges and successes will be discussed. Both initiatives provide valuable evidence to enhance the provision to all undergraduates.

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Keywords: *Digital literacy, information literacy, undergraduates, peer mentoring, student support, collaboration*

Information-Seeking and the LIS Student: Do They Differ from Undergrads?

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Much research exists on information seeking behaviors across many different user groups, including researchers in various disciplines, studies comparing faculty with students, and research focused on specialized researchers such as amateur genealogists. The Project on Information Literacy (PIL) conducts ongoing studies on the research and everyday life information-seeking behaviors of American undergraduate students. These studies indicate undergraduates tend to return to the same sources, in the same order, when looking for information on any topic. Further, they tend to be curious and engaged in their research, but are often frustrated by the amount of available information, and generally turn to faculty and friends for assistance. Although they use library resources for research, they rarely consult with librarians. With the permission of PIL, this research administered the same survey to graduate students of library and information science (LIS) at one American institution. This session will examine the results and compare and contrast the information-seeking behaviors of LIS students to the average undergraduate described in the PIL studies.

Keywords: *information behavior, LIS students, information literacy, LIS education, information seeking*

Lessons on Information Literacy Research: A Portuguese Experience

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From 2007 to 2010 a project titled Information Literacy in the European Higher Education Area: Study of the Situation of Information Skills in Portugal (eLit.pt) was conducted. The project focused on the field of information literacy (IL) and was funded by the Portuguese Science and Technology Foundation (Ministry of Science, Technology and Higher Education) and coordinated by the University of Porto Department of Information Science. The aim of the project was to understand the level of university students' information competences required by the creation of European Higher Education Area (EHEA).

This paper presents our experience in terms of research methods to analyze information skills. We consider this study of interest to LIS community in terms of methodology. Our research had some peculiarities that distinguish it from the usual IL studies. Distinctive features of the e-lit project appear either in terms of theory approach, criteria sample, the broad population sample, a mix of research methods, and of an exhaustive questionnaire.

We established that it is important to develop field research linking theory and practice. We assumed the importance of a definition of Information and the value of the cognitive process. Another aim of the project was to understand the connection between information literacy and information behavior. In this sense one of our research hypotheses was that information behavior is connected with expectations, needs, and lifestyle. Thus we assessed the aptitude and attitude of university students towards information literacy. We designed a theoretical model named e-lit model, which expressed our IL point of view. This model was the base for planning the survey. We consider education as a system; consequently we decided to analyze the preceding educational level, high school. It is our understanding that the information competences acquired at this level determine information behavior of university students.

We assumed that information background was potentially different in distinct geographic areas of Portugal. The study was performed on a national scale, in order to allow comparisons between regions with different levels of development. The sample included students from high schools and universities. The goal was to compare students' competences in three different moments, i.e. prior to the university, during the university frequency period and at the end of the university degree. The sample had approximately 2000 students. We used mixed methods - both qualitative and quantitative. The qualitative method allowed obtaining precious indicators about the students' information behavior, expectations, needs and use of information. The obtained indicators were used to design the questionnaire, which were performed in ten secondary schools and ten universities.

The questionnaire was designed according to theoretical principles and information literacy standards. We used 54 items with a core group and transversal questions. In this paper we emphasize the methodological IL research aspects. We found some limitations related to the use of quantitative research. Our research reveals the importance of developing effective methods for IL research.

Keywords: *Information skills, Portugal, university, high school, survey*

What Librarians Say: Enablers and Barriers to Information Literacy Education in Higher Education

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Voices of academic librarians working in best-practice information literacy programmes provide candid and valuable insights into enablers and barriers to achieving outcomes and missions of information literacy. The paper reports select findings of an extensive research project which examined information literacy education in a range of higher education libraries and included in-depth semi-structured interviews with librarians involved in information literacy initiatives.

Rigorous qualitative analysis of comments from these librarians resulted in the development of major themes of 'structure', 'people', 'relationships', and 'time' as both barriers and enablers. Related themes of 'democracy', 'ownership', and 'money' also emerge from the investigation and assist in clarifying what facilitates and what hampers effective information literacy education. The impact of these enablers and barriers on information literacy initiatives is discussed in detail.

The findings build on and extend earlier studies which focus on 'faculty culture' as a major barrier (Hardesty, 1995; McGuinness, 2006) and 'faculty collaboration' as a major enabler (Raspa &Ward, 2000, Julien & Given, 2003, Saunders, 2012) of information literacy in academic environments. The paper suggests that while these continue to impact the effectiveness of information literacy initiatives, a more nuanced and holistic approach is presented by the findings of the research. Implications for what constitutes effective information literacy practice are discussed.

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Keywords: Information literacy, enablers, barriers, academic libraries, higher education

Role of Public Libraries in Information Literacy in Turkey: A Research on a Provincial Public Library

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Objective

In this study, it was intended to put forward the role and function of Ankara Adnan Ötüken Provincial Public Library in enabling the users to gain and develop information literacy skills. In other words, it was aimed to determine the role of the public library in information literacy based upon a library sample. In this context, it was intended to specify the effect of the library in fostering the user to use information technology to access the information they need, to reach and use library information sources. There are limited studies performed regarding the role of public libraries in information literacy in Turkey. In previous studies, the roles and perceptions of school libraries with regard to achieving information literacy skills, the importance of teaching information literacy skills to students and the role of school media specialist on this issue were dealt with.

Method

In this study, descriptive method was used. Data was collected with a questionnaire. Within the context of the research, a questionnaire was applied to 111 users including children, teenagers and adults, using Ankara Provincial Public Library and chosen through random sampling in November, 2013 during their use of the library[1]. Within the scope of the research, situations of Ankara Provincial Public Library users chosen with random sampling and dealt with in an information literacy context, and the impact of the library in this paper were intended to be evaluated.

Outcomes

- Users cannot reach information sufficiently via the Internet in the public library (37, 6%)
- Users cannot access to the electronic sources (43,7 %)
- Library doesn't have a significant contribution to the development of computer use skills in general (54,6%)

Contributions

This is the first and current study in Turkey putting forward the role and function of public libraries in information literacy. With this study, to what extent provincial public libraries fulfill their role in information literacy was intended to be determined basing upon the largest public library sample. Insufficiencies and problems revealed through the study will contribute in terms of leading the politics they will lead in the context of information literacy. As a result of the research, the library was recommended to provide information literacy courses on a regular basis for its users. Moreover, it is possible to take such following lesson from the experience acquired: Social segments mostly influenced by the digital divide are the groups with no relation with formal education, as they are not information literate. Public libraries are significant institutions in terms of preventing their social exclusion and resolving their information access problems.

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Keywords: *Public libraries, information literacy, life-long learning*

Total user number of Ankara Adnan Ötüken Provincial Library is 10.0000 for November, 2013. According to Çıngı (1990, s.262), this user number can be sampled with at least 73 persons taking 0,95 confidence level and 0,05 tolerance limit into consideration. Our sample represents the population

Six Views on Education about Information Safety in Libraries

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The paper presents the results of 360-degree feedback, regarding whether the library should ensure information safety in its educational activities. This connection is not sufficiently researched. The purpose of education in libraries about information safety can be derived from risk communication and disclosure of abusable information and attacks using that information (Livingstone, Haddon, Görzig & Ólafsson, 2011; Oolo & Siibak, 2013; Walrave, Vanwesenbeeck & Heirman, 2012; Weeden, Cooke & McVey, 2013). Education to increase Internet safety is proving crucial, but with limited options of software and legal measures to secure user behavior (Ranguelov, 2010; Martin & Rice, 2012). Martin and Rice (2012) rank the library as one of the elements cooperating with the school, and activities of directors, teachers and librarians are considered essential to increase Internet safety. The library was ranked in 8th place among the sources of advice on online safety for children (Livingstone, Haddon, Görzig & Ólafsson, 2011). Its importance grows when we consider the willingness of libraries to engage in lifelong learning in the local community, with a focus on Internet safety, as seen in published interest in the USA (Marcoux, 2010), and where there is clear inclusion in information literacy (Grayson, 2011 in Digital and information literacy edition).

The research presented offers different views from stakeholders regarding the involvement of libraries in education about safe Internet communication. It was conducted through semi-structured interviews with six people (teaching librarian, director of library, teacher, deputy director of one primary school, pupil and her mother) in the second half of 2013. Interviewees described opportunities and threats in this field and the strengths and weaknesses following the lesson in the library about Internet safety. Questions were directed to three areas: general involvement of libraries in education on this topic, including preparedness of librarians, former interviewee opinions and the reasons for their change and evaluation of the lesson which took place several weeks or months before the interviews (the distance in time was needed to detect long-term impact, not emotionally affected current opinion).

The interviews revealed positive and negative findings, but prevailed on positive side. For example, four of the interviewees stated that the lesson initiated pupil discussion regarding the topic; also teachers and parents thought about the topic after the lesson. Problems of librarians were identified regarding lack of knowledge of pedagogy and Internet safety, and in losing time to learn and teach this new topic. Both the library and the school insisted on the periodic repetition of the lesson by a library employee in next years. All interviewees agreed that the library has a place in education about Internet safety. They welcome alternative dealings with the topic and they think that the education should be repeated and extended to other groups, also in cooperation with schools.

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Keywords: *Education, information safety, Internet, libraries, research*

Children`s Internet Competence vs. Self-confidence and Self-comfort: Case Study of Latvia

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The objective of the paper is to identify the relations between children's internet literacy and children's internet use practices in Latvia. The results are compared within the context of other countries.

This study uses the survey designed by the *EU Kids Online* network (Livingstone, Haddon, Görzig, & Ólafsson, 2011). A random stratified sample of 1,001 children aged 9-16, were administered the survey at home, face-to-face, with a self-completion section for sensitive questions (October 2013). There were also four focus group interviews in Latvian and Russian with parents of children of age groups 9-11 and 12-16 in April 2014.

Children in Latvia are active internet users, and on the average a child spends 107 minutes a day on the internet compared with an EU average in 2010 of 88 minutes. Latvian children are very self-confident about their internet competence. For half the children their parents are not authorities in internet use and they do not always obey the parents' advice and ignore their control – sometimes (41%) or frequently (9%). The focus groups showed that trends in Latvia are similar to other countries (for example, Australia) – if parents have low competence they tend to prohibit or restrict the internet use. This trend is not always linked with the level of education of parents. A big role is played by the parent's notions of their responsibility, mutual openness in the family (only 54 % of children said that their parents know a lot or quite a bit about their activities in internet). Supervision by the parents in all the aspects included in the study was generally lower than in the EU, in some aspects it was close to the situation in Russia. Children in Latvia get advice and assistance from their peers more than in the rest of the EU (81% and 73 % respectively). Comparatively more assistance is received by children from teachers (84% and 81% respectively). A significant role is played by librarians (21% and 6 % respectively). But the actual internet skills of children are lower. Of 8 skills included in the questionnaire in Latvia (2013) on the average children used only 3.6 compared with 4.2 in the EU in 2010. Lack of knowledge and dialogue with adults decreases children's ability to evaluate communication situations critically which appears to promote their self-confidence and self-comfort but they have decreased opportunities of noticing and evaluating risks. One of the reasons may be the lack of comprehensive media education in Latvia. However a further factor is the role in the facilitation of children's internet competence of family culture and traditions. Addressing this is also a way for parents to overcome the generation divide between themselves as digital immigrants and children as digital natives (Prensky, 2001) because overcoming of these differences, as shown by the focus group interviews, involves more than economic or educational factors.

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Keywords: *internet literacy, children, EU Kids Network, parents, teachers, family culture*

Strategies for the Effective Implementation of Information Literacy Instruction in Medical Libraries of Pakistan

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Background

The first part of this study (Ullah & Ameen, in press) reveals that information literacy (IL) instruction practices in most of the medical libraries in Pakistan are in its infancy. Only few medical institutions have integrated IL into the curriculum as non-credit course. Head librarians are responsible for imparting IL instruction as no instructional librarian positions currently exist in Pakistani medical libraries.

Objective

To propose a strategy for effective implementation of information literacy instruction in academic medical libraries of Pakistan.

Methodology

A semi-structured questionnaire was developed and mailed by post to the head librarians of all (114) academic medical libraries in Pakistan, established till August 2013 and recognized by PMDC. SPSS software was used for analysis of data and relevant descriptive and inferential statistics were applied.

Findings

After continuous follow-up efforts 70 (61.4 %) head librarians responded to the survey. One instrument was discarded, as it was carelessly filled. Therefore, 69 (60.5 %) usable responses of head librarians were analyzed. The results of the questionnaire survey had revealed that none out of eight IL skills received mean score exceeding four from respondents of both public and private sector institutions, which is an indication of low level of perceived IL skills of library users. The two most effective methods of IL delivery identified were workshops/seminars and formal in-class teaching as part of the main curriculum. Forty one (59.4 %) respondents were in favour of integrating IL into the curriculum. Out of 41 respondents who supported integration of IL into the curriculum 28 (70.0 %) opined that IL should be accommodated into the curriculum as an independent course. Thirty one (75.6 %) respondents were also of the opinion that IL should be integrated into the curriculum as a credit course. Overwhelming majority, 62 or 92.5 % of the respondents were of the opinion that both librarians and faculty should design IL instruction curriculum. Medical librarians were divided and undecided regarding the role of medical faculty in imparting IL instruction. Our results are consistent with published literature, particularly integrating IL in curriculum and collaborating with faculty (Baro, et al, 2011; Cobus, 2008).

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Keywords: information literacy instruction, strategies, medical libraries, Pakistan

Personal Information Literacy and Information Culture in Information Education: Characteristics of Teachers and Librarians' Work

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Introduction to the Issue

The development of information society and information economy generated the necessity of information education. An information economy requires a wide range of professionals in the sphere of information: information technology specialists, programmers, specialists in information security, managers of information resources, business analysts and others. The system of professional information education provides the training of these specialists. However, an information society and information economy can't develop without increasing the information literacy and information culture of all citizens. That's why the problem of general information education, which is oriented to all the members of society but not just for those involved in professional information activities, has escalated. In other words, we are talking about "information education for all." Important concepts characterizing information education for all are information literacy and personal information culture. The implementation of information education for all is primarily carried by schools (colleges, universities) and libraries. Accordingly, the key figures to solve the problem of mass education information are teachers (professors) and librarians.

Objectives

The paper's aims are: 1) to propose a definition of the concept "information education for all" and give reason for its basic principles; 2) to show the similarities and differences between the concepts "information literacy" and "personal information culture; and 3) to reveal the peculiarities of teachers, university professors and librarians activities in teaching information literacy and the basics of personal information culture to the children and youth.

Outcomes of the Contribution

The paper reflects activities of Scientific Research Institute of Information Technologies in Kemerovo State University of Culture and Arts, after more than 10 years of working in the framework of UNESCO "Information for All Programme." The paper shows the results of the Institute's theoretical research in the field of general education implementing information literacy in schools, colleges, universities and libraries of Russia. Long-term experience with Russian teachers and librarians in promoting the ideas of information literacy and information culture is analyzed as well.

The paper considers the following questions:

- How are information literacy and information culture understood by teachers (professors) and librarians? What are their similarities and what are the differences?
- What are the strengths and weaknesses in teachers' (professors) and librarians' work on the development of information literacy and information culture of children and youth?

Conclusion and Suggested Decision

The applied research and experimental work asserted the benefits of integration among a variety of structures and various professionals (teachers and librarians) in promoting information literacy and information culture. The problems of this promotion in Russia are divided into two groups: cultural and organizational. Mental problems are rooted in the dominance of a technocratic approach, believing in the power of ICT. Organizational problems are due to the fact that the Russian educational institutions and libraries are administered by two different ministries: the Ministry of Education and Science and the Ministry of Culture. Their actions in the field of information education and training are uncoordinated. In solving these problems a trans-disciplinary approach was applied and the activities on improving the integration among different structures involved in information literacy and information education were listed.

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Keywords: *Information literacy, information education for all, personal information culture, library and teacher's community, Russia*

Public Libraries and Information Literacy: What Kind of Problems do they Face?

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The purpose of this presentation is to examine what kinds of issues public libraries are facing in efforts to turn information illiterate patrons into information literate ones. The objectives are to: (i) synthesize a highly diverse sample of what public libraries are doing in this area, and (ii) examine several key problems in establishing and conducting information literacy efforts in public libraries. While there were numerous efforts related to information literacy in libraries, there are many more related to school and academic libraries than public libraries. Public libraries are not included (but only implied) in guidelines for information literacy of the International Federation of Library Associations and Institutions (IFLA) (Lau, 2006, 2012) and The Standards and Guidelines of the American Library Associations (ALA). However, public libraries have an essential role in helping people develop their ability to find and use information. This goes beyond formal instruction, as summarized so well by (Leininger, 2012): "What would surprise most public librarians is that they have already taken on the role of "information literacy educators." The presentation shows some examples of highly diverse information literacy efforts in public libraries. The sample includes several medium to large size public libraries in the United States and Croatia. From these, and other examples that can be easily found from web sites of public libraries in various countries, one conclusion stands out: regardless of country or size, at present public libraries in different countries are offering, among others, a similar information literacy program concentrating on providing instruction and guidance in handling and using various information tools. Due to rapid changes in information technology and users' growing needs, information literacy currently also subsumes digital literacy, computer literacy, and even skills needed to use the Internet effectively. All of these make public libraries also face various kind of problems. Here are some major issues:

- Librarians feel inadequately prepared for an instructional role (Julian &Breu, 2005). *They lack formal training in educational theory and methods to start with.*
- Rapid changes in information systems and digital resources place librarians in a difficult position of keeping up by themselves – this requires support to develop their own information literacy competencies. Harding (2008) cites projects for this purpose in a number of countries. *Trainers need to be trained.*
- Public libraries have a highly diverse patron base making it next to impossible to create programs relevant for all patrons. *Thus, programs have to be oriented toward specific groups or situations.*
- Information literacy efforts require all kinds of resources – human, technical, facilities ... . All this is costly. *In times of financial difficulties, this becomes a major impediment.*

When it comes to information literacy, a major role of public libraries is to provide an information rich environment to all and to help information poor persons to become information rich. How to accomplish this is still not clear. In conclusion, the concept of information literacy, particularly in the context of public libraries, needs a clearer understanding of what information literacy actually is and what skills and abilities it encompasses. The examples provided here of actual information literacy programs in public libraries show a high diversity of activities, supporting that conclusion.

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Keywords: *Public libraries, information literacy, digital literacy, library education*

Academics' Use of Scholarly E-Journals: A Case from the University of the Punjab

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The emergence of electronic information resources has made a profound impact on academic scholars, libraries, publishers and information professionals. Due to the ICT developments more and more scholarly journals are either converting into or publishing in electronic form. The awareness and use of e-journals is also growing in developing countries. The University of the Punjab provides access to full text e-journals through the University library e-journals resources (Higher Education Commission's National Digital Library Programme) for faculty members, students and researchers. Studies have commonly revealed the increasing trend of using electronic information resources among students and academics (Arif & Ameen, 2011; Arshad & Ameen, in press). The findings of a recent study also revealed that our researchers use general internet resources and free scholarly journals more than the subscribed high quality e-journals (Tahira, Alinda & Ameen, 2011). There is a need to study the use patterns of e-journals by academic community in Pakistan as well as the barriers associated with such use.

This paper is based on an ongoing research project and researcher will report the results of pre-testing. The study aimed to investigate the patterns of using scholarly journals and articles among academics of various faculties. The study also sought to determine the major factors affecting the use of e-journals; academics perceived usefulness of Higher Education Commission's e-journals and the barriers academics face while consulting e-journals.

The design of the research study is 'Quantitative' and survey method has been adopted to accomplish the objectives of the study. The research instrument is a self-administered questionnaire that will be distributed to academics of twelve faculties of University of the Punjab who are working on a regular or contract basis. The questionnaire was developed and pre-tested by researcher. Reliability of the research instrument was also established by measuring Cronbach's alpha value of questions having scale items. Questions were asked about Web Literacy, and about trends in accessing, searching and locating e-journals and articles, the Usefulness of the Higher Education Commission E-Journal Collection, barriers in using e-journals as well as basic demographic information of the academics.

E-journals are an important channel of scholarly information communication. The findings of the study will provide academics' use patterns of e-journals in different faculties - Sciences, Social Sciences and Arts and Humanities that will help to provide suggestions for supporting the academic community of University of the Punjab. The digital literacy skills of academics will also be identified. The findings will be important for Punjab University librarians particularly and for other universities' librarians in general. It is expected that this outcome will facilitate academics, researchers and students in their research output. The study's findings will be particularly beneficial for Higher Education Commission's authorities in making policies for subscribed e-journals that are provided to public sector Universities of Pakistan.

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Keywords: E-Journals, Scholarly Information Seeking, Digital Literacy, Open Access, Academics, University of the Punjab

A New Approach to Equip Students with Visual Literacy Skills: Use of Infographics in Education

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Visual literacy is defined as 'A group of acquired competencies for interpreting and composing visible messages' (Brill, Kim, & Branch, 2007). Visual literacy allows a deeper interaction with messages of all kinds and introduces the process of analytical thinking about representation and meaning. In today's ever more visual world, visual literacy skills became more critical for learners. Educators realized the idea that the visual age requires visual literacy skills as well as verbal skills, and that both of them must be developed (Eilam, 2012). Therefore teaching visual literacy helps students interpret visual media and becomes a much broader and extensive body of learning and comprehension in education. In educational context, visual literacy skills could be gained through various kinds of visual representations like films, animations, 3D models, photographs, diagrams, maps and infographics.

"A visually literate person is able to: (a) discriminate, and make sense of visible objects as part of a visual acuity, (b) create static and dynamic visible objects effectively in a defined space, (c) comprehend and appreciate the visual testaments of others, and (d) conjure objects in the mind's eye" (Brill, Kim, & Branch, 2007). In order to use especially visually intensive information and communication technology applications effectively teachers and students should be able to communicate visually (Sims, O'Leary, Cook, & Butland, 2002). To prepare students to be successful learners, confident and creative individuals, active and informed citizens, they must be able to comprehend, interpret and extrapolate from information presented in a wide variety of formats. Infographic is one of those formats which is defined as "visualization of data or ideas that tries to convey complex information to an audience in a manner that can be quickly consumed and easily understood" (Smiciklas, 2012). As technology advances, teachers and teacher candidates should gain in teaching visual literacy skills.

In this paper, how to use infographics as a learning tool is discussed in order to equip students with visual literacy. Research was conducted with 64 teacher candidates from Hacettepe University, Faculty of Education. The aim of the study is to expose the usage of infographics as a learning tool. Teacher candidates designed infographics of instructional design model themed individually within the course. As a result of the rubric evaluation the scores of "visualization" and "components" dimensions were found lowest; scores of "colors", "fonts" and "information organization" dimensions was found relatively higher.

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Keywords: *Infographics, visual literacy, instructional design, teacher education*

Transliteracy and Knowledge Formats

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Transliteracy is at the crossroad of three main fields: information, media and computer literacies, as well as a meta-literacy. Information transliteracy in education can be observed through students' activities in project situations, which show a transformation of learning strategies and transfers between informal digital abilities and formal academic skills. A research project, "Translit", is conducted in France on youngsters in scholarly and non-scholarly activities. Our team observed 16 years old pupils in project based activities. Our scientific protocol relies on an ecological approach of capturing pupils' information retrieval and communication practices. We have characterized typical transliterate activities which are cognitively distributed and situated. During our research, we were able to evaluate the pupils' capability to organize their information environment, to coordinate the work among the members of the groups and to master the communication process. There is a direct correlation between these capabilities and the success of the projects. Youngsters own an elaborate "art of practice"; they tend to invent ways of doing things which are not orthodox according to what they are taught, but nonetheless efficient and explicable using thoughtful devices.

We use the term grammatization of information to characterize the process of creative learning, construction of knowledge and competencies on information which lead to information transliteracy. Grammatization appears when pupils are induced to think about their own practices in the process of activity and criticize them according to their social, academic and individual needs, constructing formal from informal knowledge on information, media and computers. It relies on conditions: the existence of intuitive but nonetheless efficient information practices, commonly acquired in social situations; the presence of a teacher librarian who induces awareness and control of the practices;, and adequate knowledge formats. Three factors are associated to transliteracy scenario: individual and collective strategies, instrumental skills with tools and devices, and an educational support to media and information literacy.

In this this paper, we propose to look at the concept of knowledge format. A format is a tangible and intangible knowledge organization model, linking "logic of knowledge and dynamic of uses" (Morandi, 2013). We examine some examples of these models that seem to be useful through our observations. These formats are open to the design of information through production of content. They can also be paths to reflection on seeking procedures and critical thinking, not just problem solving but also questions discovery. We propose to examine some criteria in order to build a typology of these knowledge formats based on transliteracy.

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***Keywords** : Information transliteracy, learning scenario, knowledge format*

Promoting Information Literacy Through Social Media Tools: Perspectives of Sultan Qaboos University's Librarians and Students

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The participatory environment of social media has been radically changing how users access and use information. Social media tools are bringing about new definitions of information literacy, especially in academic settings. We have currently been facing a new trend where access to use, and evaluation of information is becoming social and collaborative. Users may now play critical roles in informing a better environment for effective and efficient use of information. Information literacy skills, therefore, can be enhanced through collaborative participation in social media tools.

The aim of this paper is two-fold. Firstly, it attempts to investigate librarians' perceptions of using social media tools such as Facebook, Twitter, or Google+ for enhancing the prominence of information literacy and its potential for life-long learning among students. Secondly, the paper aims at understanding students' perspectives and current practices on using social media tools, including cross-platforms mobile apps for advancing their competencies of information literacy and sharing related knowledge with their peers and other users. The study uses a combination of qualitative and quantitative methods to collect relevant data through semi-structured interviews and self-administered questionnaires from librarians and students at Sultan Qaboos University. It is hoped that the outcomes of this empirical study will help inform the design and development of information literacy programs at academic institutions in Oman and elsewhere through exploiting social media technologies. It is also hoped that the results will shed light on the power of social media and its influence for spreading information literacy and promoting users' competencies in the digital environment. The study will also contribute to the literature of information literacy in Oman and the overall Arab World.

Keywords: *Information literacy, social media, social networking tools, higher education, academic librarians, Sultan Qaboos University, Oman*

What are they doing for information literacy skills of their students? Study of pedagogical Practices of Faculty

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Objectives

In Pakistan the Information Literacy movement is still in its cradle. Since faculty plays the main role in the learning process of their students, in order to design and implement better IL instructions, a study was carried out to investigate the efforts of faculty to develop the information literacy skills of their students.

Methods

A total of 91 faculty members of the National University of Science & Technology (NUST) who were teaching at postgraduate level in eight schools of an engineering university respondedin this exploratory study. Questionnaire based survey method was employed to find out about the reported pedagogical practices of the faculty related to information literacy. A structured questionnaire was sent to 113 teachers and the achieved an 80% response rate. The study used the ACRL Information Literacy Competency Standards for Science and Engineering/Technology as the basis to identify these practices. The respondents were also asked to report their level of interest and support for nine listed information literacy instruction modes on a 3-point attitudinal scale. An ANOVA was used with college affiliation and information literacy modes as the predictor variables to test for IL differences.

Results

Analysis of the collected data reveals that faculty is fully aware of importance of information literacy instruction for their students and they are ready to support any such initiative from the library. The respondents are using a variety of methods and techniques to guide their students in this regards but there was no consensus on the best method. Results also revealed that there was no significant difference between colleges in the use of various modes.

Conclusion

For designing and effective implementation of any information literacy instructional program faculty opinion has significant weightage. Since they have been using a variety of methods by themselves, their own already proven pedagogical practices in this regard can guide librarians to design their own formal Information literacy programs.

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***Keywords**: Pakistan, Information Literacy, Faculty pedagogical practices, Higher education.*

DOCTORAL PAPERS

What and Why a Research About Reading Promotion on Public Libraries in the Metropolitan Area of Lisbon

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Our aim for ECIL 2014 is to share the research in progress, in the University of Évora, with the goal of understanding how reading promotion practices happen in Portuguese public libraries. This is a field where there is still much to know and we hope to help fill in some gaps. Our research is based in interviews and documental analysis in evidence produced between 2009-2013 and gathered from 18 municipal public libraries from greater Lisbon (2.962,4 km², 2.821.876 inhabitants).

As we have seen, we find significant literature and theoretical reflection about the educational and civic role of libraries in dissemination and access to culture, information and promotion of reading, and literacies. There is also extensive theoretical literature on reading, information literacy and other literacies, as well as some studies on the Portuguese reality on this topic. But these, being focused on a quantitative methodology, only provide very general and diffuse information on the activities undertaken by public libraries.

So far, we have not found (with the exception of occasional monographic studies) qualitative research that has produced effective knowledge about the work done by libraries in promoting reading and/or literacies (and around these concepts there still exist situations of metonymy and semantic differentiation). Also, there are no extensive studies specifically targeting the conceptual framework that Portuguese libraries attach to their work to promote reading and literacies: what is the type of models; what are they are based on; how is promotion designed; which activities are utilized; what role is given to the target audiences; how do the libraries evaluate the activities that developed; what are the practical difficulties and limits; what vision and paths did these libraries follow when determining their actions prior to the current challenges they face; what are these libraries' prospects for the expansion and success of their promotion of reading and literacy interventions.

Considering the current framework and critical literature review we conducted on the subject, we cannot claim that there is actual research on how effectively we process practices to promote reading and literacies in Portuguese libraries, or how approaches to new technological, social and cultural realities are being considered. To acquire this knowledge we need to collect accurate, systematic and consistent information on processes and outcomes of locally promoted practices. And we need to develop an analysis and interpretation that better understands the interventions developed by these libraries in a time of global transformation where the domain of practice and use of reading skills and literacies are compelling and unavoidably needed in the context of a culture of information. The answer to these questions is the problem we seek to solve. And, as such, we deem, our presentation in this forum will be a useful endeavor for their achievement: to add knowledge about the reality of Portuguese reading promotion.

Keywords: *Information culture, information literacy, literacy promotion, reading and literacy, reading promotion, public libraries, qualitative research*

Intercomprehension in Online News for Ethical Information

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Tension between the global and local world is a contemporaneous challenge in the society of information. Its movement started with the development of telecommunication technology, first with satellite and later by the Internet. Despite the fact that "foreign news" (Berger, 2009) reaches our screens all day long, it seems that even online-news gives us local versions which are tailored to our cultural, geographical, and linguistic visions (Bielsa & Bassnett, 2009). They are evolving into a beta version called "domestication" (Berger, 2009). In this multilingual and multicultural world, online journalists have to work faster with different online resources. Nowadays, lots of news is based on second hand information instead of a direct experience. But it seems that journalists do not necessarily have the opportunity to think about their metalinguistic strategies even if they work on a day-to-day written basis using original pieces of news, to adapt them to new readers in a new language or culture (Hernandez Guerrero, 2010). In Europe, it seems that speaking languages and living abroad for a while are both criteria to recruit journalism students. But there is no formal space to speak about their plurilingual competences in their curricula even if "translation" is considered one of the tasks of a journalist (Gambier, 2010). UNESCO's Model curricula for journalism education (UNESCO, 2013) consecrates one out of its ten syllabi to "Intercultural journalism" (Ibid) and another to "Global journalism" (Ibid), however, there is only one mention of the language of "Media in regional language" and no mention of transfer between languages despite UNESCO is actively engaged in multilingual education.We suggest that giving journalists some spare time to think about their language practices might bring about more transparency and diversity in the circulation of news. With a "top-down" focus, it means that journalists could participate in information literacy by offering citizens the opportunity to see different points of view through online access to a range of languages and cultures. From this hypothesis, we suggest an innovative approach of the didactic of intercomprehension (Carrasco, 2010) between roman languages within the newsrooms. In the present article, we would like to present a model frame for a didactical approach of intercomprehension in online journalism. To go further than the theory, our work in progress researches approaches to understand if journalists might use intercomprehension in their work. For that purpose, we did interviews with online journalists so that they could speak about their language practices in their work.

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Keywords: *Plurilinguism, multiculturalism, media, citizenship, mutual understanding, intercultural*

Research Dimensions in information seeking of music: a plea for the socio-technical perspective

"...here are signs of a change as new and powerful instrumentalities come into use…"

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According to the perception of information literacy as a sociotechnical practice as conceived by Tuominen, Savolainen and Talja (2005), IL has to account for how individuals interact with technical artifacts or other people in their information environments. A second conceptual point of departure within the sociotechnical view is that IL evolves in the course of realizing specific work-related tasks within domains in which skills are used. This paper will contribute to this socio-technical oriented research in IL by identifying and analyzing information practices and the use of suitable technical tools in a specific task-related setting (Jarvelin & Ingwersen, 2004), namely in the course of music information seeking which fits into the scope of every-day information seeking. Research in information practices pertaining to finding audio/music resources is a fruitful and exiting area for analyzing patterns of information behavior, due to the availability of systems for finding audio resources with music recommendation algorithms and machine based content analysis. New research tools available could help us better understand the complex socio-technical system we live in and to develop further the culture of information contributing to IL.

With the development of the new technologies, machine based techniques are becoming available to researchers which can provide useful data and research material. Such development of the technology is leading to research techniques that combine "old school" techniques based on face to face interaction with information users, with "new school" machine based techniques. These allow a widened perspective and insight into information use, and the development of tested theories, models and frameworks of information use which are a precondition for constructing socio-technical systems.

The author will first provide an overview of theoretical frameworks of information seeking behavior (Case, 2012, Foster, 2005, Lakshminarayanan, 2010, Naumer et al. 2008, Savolainen, 2011) and analyze music information seeking behavior research papers published within the last ten years. An important dimension of analysis will be the methodological dimension, specifically the degree and kind of technology utilized for conducting research in information seeking behavior. Research will be analyzed in terms of theories and models on which the research is built, hypotheses and research questions stated and methodology and techniques used. Finally, the author will define the impact of the analyzed research papers based on citations.

Findings will be presented in the form of an analytical matrix in order to visualize insights and conceptualizations for future research in the field of music information seeking behavior, with special regard to the presence/absence of the socio-technical perspective. Also, the matrix will provide an analytical framework for other domains of information seeking behavior and thus give an overview, from a bird-eyes perspective, of the methodological landscape in information seeking behavior.

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Keywords: *information seeking behavior, music/audio resources, socio-technical perspectives, research techniques analysis*

Technology and Learning in the School Library

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This paper describes the results of a Survey entitled "Technology and learning in school libraries ' which was conducted among 200 school librarians in Croatian schools during May 2014.

The aim of the research is to show the relationship between standard indicators of ICT in elementary and secondary school libraries and the information literacy practices that are being developed in the learning process.

Topics discussed:

- Information and Communication Technology and their usage by school librarians / Indicators of standards of school libraries
- The involvement in the educational process: the promotion of multimedia, digital and Information Literacy
- What do librarians consider the biggest challenge / problem for the inclusion of technology in the learning process in the library or school.

The findings include interesting issues and also indicate differences between school libraries in three different areas: urban, rural, suburban; indicate differences between ICT education of librarians and the opportunities that they have in their schools. It also covers areas such as teaching tools, and the use of digital media to access and use information effectively.

Research findings include self-evaluation about the quality of work with technology in the school library.

The most interesting finding is what school librarians in Croatia consider the biggest challenge / problem for the inclusion of technology in the learning process.

Research can contribute to the development of involvement in the educational process with the curricula of librarian-information programmes. The conclusion offers possible strategies for collaborative learning.

Keywords: *School librarian, technology, learning, IL*

Early Findings from a Study of Information Literacy Practices in Primary Schools of Pakistan

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Learning information literacy skills through effective pedagogical approaches is very important in this knowledge society (Chu, Tse & Chow, 2011). Literature has identified the lack of information literacy skills in schools' classroom practice (Probert, 2009). Authors have advocated introducing information literacy (IL) as early as possible (Kelly, 2013; Eisenberg, 2011). However, there is a lack of research, or even descriptive studies, at the primary school level. A previous study by the author (of Pakistan's primary school teachers' perceptions of IL) showed that this level is vulnerable in terms of IL learning (Batool & Khalid, 2012). IL learning transition from pre-school to the primary level has not been given importance in the published literature. Information literacy learning is necessary for every child so that they can develop into well informed adults. Primary school teachers have the opportunity to include IL content due to flexibility in the organization of the school day and learning across the curriculum (Education Scotland, 2008).

This paper will be based on the researcher's pilot study results. The PhD study aims to explore information literacy practices in primary schools of Lahore, Pakistan. Lahore is a major Pakistani city and will be the research site for the study. The paper will discuss the study's background, methodology and the results of the pilot study. The research design of the study is multiple sequential case studies and is exploratory in nature. This paper will share the findings of the pilot study which was conducted in one primary school of Lahore, Pakistan. The pilot interviews were conducted with class 1 and 2 head teachers, as well as two focus groups with students. The head teacher further recommended interviewing the library teacher and computer teacher for more relevant information. The researcher will report on her analysis of the findings and will identify changes made to the research design as a result of the experiences in the pilot study. On the basis of the pilot results, the final methodology of the PhD study will be presented in the presentation. The outcomes of the pilot will be interesting for conference participants who are interested in an IL scenario in primary schools from an international perspective. The paper also intends to seek experts' and colleagues' feedback and valuable suggestions on the work done so far.

The PhD study will propose an IL model for the selected primary schools of Lahore, Pakistan based on findings. This baseline study will be a valuable contribution in a local perspective and an overall addition to school sector IL literature. The findings of the PhD study will provide directions to the policy makers and concerns to develop and improve IL programs at the school level in Pakistan. However, the findings could be transferable to other countries with similar educational and cultural settings.

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Keywords: *Information literacy, school children, Pakistan, case study*

Integrating Information Literacy Instruction into Iranian Primary Science Curriculum

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According to ALA (1989) information literate people are those who have "learned how to learn". The importance of information literacy (IL) skills instruction in elementary and secondary schools and its relation to lifelong learning has led to dramatic shifts in the education system of many countries. Since then IL skills instruction has been integrated into curricula.

This doctoral forum paper presents the conceptual framework and the methodology of the researcher's dissertation which aims to integrate IL skills instruction into the Iranian primary science curriculum through linking between the classroom and the school library in order to identify the extent to which integrating IL skills instruction into primary science curriculum will improve the IL skills of students?

In recent years, Iran's Ministry of Education has embarked on reforms in the education system. However, despite the adoption of various documents and acts for the evolution of the education system, research shows that as yet IL skills, school libraries and librarians do not have an important role in the school's curriculum, documents and text-books. Thus, due to the lack of IL skills teaching in the education system of Iran, especially in the primary school curriculum, this paper aims to make state education officials aware of the importance of IL education in schools.

The Big6 Information Problem Solving Model of Eisenberg and Berkowitz (1990) was used in this dissertation for integrating IL skills into the Iranian 6th grade science curriculum. The first step includes integrating the Big6 model into the 6th grade science curriculum and providing the instructional pack and lesson plans. This step used qualitative content analysis of the Iranian national education documents and acts and the 6th grade science curriculum teacher guidebook in order to extract educational goals for curriculum design. Then, based on Eisenberg and Berkowitz (1999) and the Big6 website, the instructional pack was provided and reviewed by the 6th grade teachers.

The second step included preparing and making the IL assessment tool based on TRIALS for assessing IL knowledge of the students at the end of the instruction. The methodological approach in this step is quantitative using the factor analysis and random sampling methods.

The third step of this research included instruction in IL skills based on a provided instructional pack and lesson plans for the 6th grade primary science curriculum using field experimental design with pre-test and post-test and a control group.

Finally after fulfilling the third step and analyzing the results, semi-structured interviews were conducted with students who participated in the research to identify their experience and perceptions during the intervention. This data contributed to a better interpretation of the final results.

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Keywords: *Information literacy, Big6 information skills model, Iranian, Primary science, Iran.*

Teaching Information Literacy Using Argument, Alternative Perspectives, and Images

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The ability to understand more than one point of view, critique and create arguments is a widely accepted learning outcome for any student engaged in a college-level liberal arts education. As Gerald Graff states: "This argument literacy, the ability to listen, summarize, and respond, is rightly viewed as central to being educated." (Graff, 2003, p.3). But how does this learning take place? Often, faculty teaching first year composition or critical thinking classes are asked to take responsibility for it and librarians are incorporated into this instruction to teach students how to do the research part of the paper -- how to find, evaluate, incorporate and cite sources in their writing.

Objectives

A variety of methods have been used to help students with the difficult task of exploring and researching more than one side of an issue and incorporating that information into a strong argument paper that presents more than one perspective. The Toulmin method has been shown to be a good way to help students understand how providing a counter-argument strengthens an argument and avoid "Myside" bias (Wolfe 2012). Other studies, such as Nussbaum's (Nussbaum, 2011), have explored the use of a more dialectical approach to teaching students how to understand and evaluate arguments based on Walton's dialogue theory of argument, which is more generative of critical thinking questions relating to the argument's strengths and weaknesses.

In adition to dialogue as a method of teaching argument and research, images have become an increasingly popular element of instruction. Our current generation of students has almost certainly used at least one of the following media: Pinterest, Instagram, YouTube, Flickr, Snapchat or Facebook, to communicate their ideas via images. To them, the image is as much (if not more) a medium of communication as the word. Researchers (Hattwig, Bussert, Medaille & Burgess 2013) have argued that visual literacy is becoming an essential aspect of information literacy given the vast amount of information now represented in both visual and digital formats.

Methodology & Results

An information literacy instructional method incorporating argument and images in a freshman course, requiring an argument and research paper, will be tested via a two group quasi-experimental comparison study; preliminary results including an analysis of research logs, a pre/post test and content analysis of student papers will be reported.

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Keywords: *Information literacy, argument, images, visual literacy, critical thinking, dialogue*

BEST PRACTICE

It's Hip to Flip: Using Inverted Instruction to Address the Needs of High- and Low-Volume Information-Literacy Teaching

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Instructional librarians in higher education often face differing teaching contexts affecting their ability to provide scalable, sustainable, and effective information-literacy (IL) instruction. High-volume instruction imposes such workload demands that librarians lack the wherewithal to develop sustainable instruction. Low-volume instruction (i.e., one-shot sessions) prevents development of scalable instructional programs. This presentation demonstrates how inverted or "flipped" instruction can enable sustainable, scalable, and effective IL instruction regardless of the context.

Inverted instruction "flips" the traditional classroom-lecture model. Students access lecture material outside of the classroom, freeing class time for active-learning activities drawing upon lecture content. American educators have implemented inverted instruction over the past decade, claiming that it improves student learning. While professional literature focuses on the benefits for learners, this presentation also focuses on flipped instruction's advantages for educators. IL sessions often focus on skills that are best taught using active-learning techniques. Inverting instruction allows the inclusion of lectures without devoting session time to lecturing. Library sessions can encompass hands-on, active learning, which is more engaging for students. Inverting instruction also allows librarians to address issues of scalability and quality in pedagogically effective ways.

This presentation reports on inverted instruction in IL sessions supporting an annotated bibliography assignment in a multi-section Introduction-to-Speech course. Flipping instruction addresses concerns of multiple stakeholders. Speech Communication faculty wanted more consistent quality of instruction across sections, while requesting that more material (citation style in addition to annotation) be covered through active learning during each session. The library instructional team's concerns included increasing consistency of instruction (both quality and content) and being able to cover the desired material effectively using active-learning techniques, in the time allowed.

The instructional materials comprise two short videos, a source evaluation matrix, and a short scholarly article. The videos introduce the structure of a scholarly article, the elements that make up an annotation, and the crafting of the annotation from the scholarly article (using the source evaluation matrix). Students were assigned to read the scholarly article and view the videos prior to the face-to-face IL session; to ensure compliance, students took a graded quiz on the content of the article and the videos. During the IL sessions, students worked in pairs to produce and submit an annotation of the scholarly article, facilitated by library and course faculty. Students completed an evaluation of the instruction at the end of each session.

Inverted instruction affords advantages for our high-volume instructional context. Students receive uniform and high-quality instruction across all course sections, and librarians function as "guides on the side," interacting with students and providing individualized, project-focused instruction. An additional benefit identified in the student survey was learners' positive responses to receiving the opportunity to take responsibility for their learning and apply the skills imparted in the videos to their specific assignment.

As a result of this presentation, participants will understand the applicability of inverted instruction to different IL contexts (high- and low-volume), appreciate the benefits of inverted instruction for departments, students, and librarians, and identify ways to apply inverted pedagogy to their IL instruction.

Keywords: *Inverted instruction, flipped instruction, information-literacy instruction, sustainable instruction, scalable instruction, active learning*

Information Literacy and First-year Students: What do They Know, What do They Learn, and What do We Learn?

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Does recursive information literacy instruction contribute to student learning and academic success at the baccalaureate level? In this best practices presentation we will describe the planning, data gathering, and analysis processes related to the initial phase of what will be a four-year longitudinal study. In the first year of the longitudinal study our primary focus was on first-year students. This project at the University of Redlands was made possible through the support of a national grant-funded program in the United States, titled Assessment in Action: Academic Libraries and Student Success, organized by the Association of College and Research Libraries. The assessment project consists of a pre-test, post-test, and student interviews administered in the Fall of 2013 to determine whether or not repeated engagement with information literacy instruction has a greater impact on student learning than the traditional one-shot information literacy session at the first-year level.

We achieved a response rate of 80% for the pre-survey (536 responses total). The pre-survey data identifies several areas with which students struggle entering their first year of baccalaureate studies. Despite a much lower response rate for the post-survey (30%), the data and student and faculty interviews illustrate the importance of information literacy instruction in student learning, as well as demonstrate student perceptions of the library and research processes. This best practices presentation suggests possible implications of data for information literacy instruction programs at academic libraries and offers suggestions on how best to administer assessment projects for interested attendees.

***Keywords**: Lifelong learning, information literacy & education, assessment, action research*

Contribution of the digital repository DRUGG to higher information literacy in the field of civil engineering in Slovenia

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An important stakeholder of information literacy is accessibility of information. In the Internet era users prefer to use information which is characterized by open and freely accessible online. Institutional repositories (IR) as electronic archives have been established as a good practice for quite some time. The European Commission (EC) has required the archiving research articles in IRs in order to grant international project funding since August 2008. Therefore, the interest in IRs is increasing in Slovenia as well. In 2011, the IR named DRUGG was built at the Faculty of Civil and Geodetic Engineering (UL FGG) of the University of Ljubljana (UL). In the DRUGG repository, mainly theses (B.Sc., M.Sc., and Ph.D. theses) are archived which are usually not published elsewhere. By the end of 2013 more than 1800 theses and nearly 200 research articles were archived in it. They are very interesting for students as a study source and for professional engineers working in practice. The main role of IR is to archive the e-publications. Its contribution to higher quality of publications, which is also provided through interoperability to the tools for checking of plagiarism, could be even more important. The IR also provides open access to publications and increases the visibility of the Faculty's publications, which may leads to higher citation. By using the internationally established system ePrints the interoperability of many systems is provided. The repository DRUGG is registered in the register ROAR and is a part of EU's infrastructure OpenAIRE. The DRUGG became a part of the Slovenian pilot national infrastructure for open access to theses and scientific publications which has been launched at the end of 2013. The publications, archived in the IR DRUGG are also connected to the national cataloging system COBISS.SI and to its subsystem SICRIS (Slovenian Current Research Information System).

Building an IR is a complex project in which the whole institution has to be involved. The paper describes the steps taken in implementing the IR considering the technological infrastructure, human resources and collaboration of the library staff with other professional and administrative faculty units. The library offers all technical support to the authors by archiving publications in the IR. Thus, the importance and the reputation of the library have increased, since it brings a significant added value to the quality of all activities at the faculty. The statistics of visits and downloads after two years of operations confirms its importance in Slovenia and abroad.

It has become a globally recognized fact that everyone profits from repositories. Authors acquire better visibility of their works, the possibility of higher citation rate, the possibility for their increased scientific impact and the possibility for the protection of copyright on ideas. The users acquire the possibility of immediate access to the results of scientific work on the global level. As IT experts and capable experts of communication the librarians from faculty libraries become an important stakeholder in quality education process and in scientific work. In that manner, libraries perform their mission as an important part of the system for information literacy.

Keywords: information literacy, digital institutional repository, faculty library, Slovenia.

An Information Literacy Course for Doctoral Students: Information Resources and Tools for Research

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The purpose of this paper is to showcase the information literacy course for doctoral students called Information Resources and Tools for Research. Turku University Library organizes this course in collaboration with the University of Turku Graduate School. The course, which was started in 2012, has been organized four times so far, twice in English and twice in Finnish. The course offers training to all Doctoral Programs in all the seven disciplines present at the University of Turku and doctoral candidates of the University. At the moment, students will get one ECTS credit for completing this voluntary course.

Information Resources and Tools for Research course is designed for doctoral candidates who want to learn to use both the printed and the electronic resources more effectively, manage their references and have the basic knowledge of scientific publishing. The course consists of computer class sessions, lectures and homework. The course material and assignments are delivered and administered in the Moodle virtual learning environment. The course content is the same for all the disciplines, but due to the heterogeneity of the disciplines, the participants are divided into groups according to their subject specialty: 1) science, technology and medicine, 2) humanities and social sciences, and 3) business, economics, education and law.

In the Turku University Library there are seven information specialists altogether for the different disciplines. To maximize the limited resources the information specialists collaborate in the planning and teaching of the course. Outside experts are also invited to lecture, for example, on ethics and plagiarism. We also collaborate with the organizer of the University of Turku Graduate School. In our presentation we will share our experiences of the collaboration and pinpoint the pros and cons of it.

In our presentation we will discuss the successes and challenges of the course. One of the challenges has been the large number of dropouts. This year, we will make a survey in order to find out the possible reasons for this. One reason could be the schedule, which requires presence at five sessions. A solution to this could be to have the course online, and that is something that we will have to consider in future.

Our overall impression of the course, however, has been very positive and that seems to have been the case for the participants, too. Course feedback shows that in general, participants have found this course very useful for their research at the University of Turku. In small groups students receive more personal feedback, and the participants have been especially satisfied with this. The course feedback is also very useful for developing the course to better meet the needs of doctoral students.

The University of Turku is one of the largest multidisciplinary universities in Finland with approximately 20,000 students. In 2013 there were approximately 1,900 post graduate students in the University of Turku. Turku University Library offers information literacy (IL) teaching throughout the university curriculum.

Keywords: *Information literacy teaching, information literacy course, Doctoral curriculum collaboration*

Graduate Preparedness: The Role of an Information Literacy Model in Transforming the Curricula at the Durban University of Technology, South Africa

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Purpose

The paper provides an information literacy model which purports lifelong learning for graduate success in the teaching, learning and research agenda at the Durban University of Technology (DUT) in South Africa. DUT embarked on transforming the curriculum and improving graduate throughput rates. The General Education Module was conceptualized to provide a holistic education and impart 'critical thinking' in DUT graduates.

Design/Methodology/Approach

A case study of realigning information and media literacy into the General Education Module in DUT is discussed. A constructivist theoretical framework underpins an embedded credit-bearing information and media literacy programme within the DUT General Education curricula. The framework re-examines IL teaching and advocates for collaborative instructional design. An e-learning design strategy for a customized interactive information and media literacy teaching strategy for DUT undergraduates is presented.

Outcomes

The General Education information and media literacy module construct, design and outcomes are highlighted in the light of student-centred learning. This paper advocates for a collaborative partnership model to re-configure the library services to the university's strategic goals.

Originality/Value

The General Education Module provided a unique opportunity for the Library to become an active partner in the academe, for meeting the challenges presented in the twenty-first century higher educational landscape in South Africa.

Keywords: *Durban University, information literacy model, critical thinking, student-centred learning,*

Adding Up to Success? Assessing Freshman Skills in Information Literacy

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Objectives

This "best practices" session will present a case study of how Loyola Marymount University (LMU) evaluated a 4-module (see http://library.lmu.edu/research/researchtutorials) online tutorial designed to meet the information literacy outcomes associated with a First Year Seminar course. The four modules that comprise the tutorial were integrated into all 74 sections of a First Year Seminar course through Blackboard, the university's Learning Management System (LMS). After completing each tutorial module, students were also required to take a quiz. The effectiveness of the tutorial and quizzes was assessed through a mixed methods approach using direct and indirect measures. Overall areas of weakness were identified and are currently being addressed. The process will lead to improvements in the teaching material and improved integration into the curricula for next year.

Methodology

At the end of the semester, student learning was directly measured by calculating overall averages for student scores on the four tutorial modules as well as the four quizzes. The quizzes were further analyzed at the individual question level and mapped to corresponding Association of College and Research Libraries (ACRL) information literacy competency standards to determine problem areas. Effectiveness of and satisfaction with the tutorials and quizzes were also measured indirectly through surveys for both students and faculty. A stratified random sample of 300 students was emailed a 32-question online Qualtrics survey. All 89 faculty and writing instructors involved in a First Year Seminar course were also emailed a 27-question online Qualtrics survey. The response rate was 41% for students and 54% for faculty and writing instructors.

Outcomes

Data from the student quiz scores revealed that although the average score for all modules and quizzes was a "passing" score, students were somewhat weak in the "evaluating sources" outcome. Also, there were weaknesses within the dimensions of locating and accessing information and information ethics. The survey data suggests improvements in the tutorial modules are needed in the areas of ease of use (technical problems), length, and feedback. The areas of navigation, organization, clarity of information, and alignment with course learning outcomes scored high. Students and faculty had slightly different perspectives on what information was most valuable in the tutorials, but they both agreed that the sections on plagiarism and finding books and articles were helpful for the course.

Designing a required online tutorial leads to standardization of information literacy across all sections of a course. Integrating quiz questions and graded activities within tutorial modules leads to direct assessment of student learning. This can be supplemented with a survey to measure the perceived usability and effectiveness of the tutorial modules from all stakeholder perspectives. This "mixed methods" technique can be applied to any class or subject area, and the assessment results can be used to improve the teaching material. Furthermore, assessment of information literacy learning outcomes leads to greater communication between librarians and faculty. This "best practices" session will lay the foundation for attendees to discuss the best ways to measure information literacy learning outcomes within a computer-mediated instructional environment.

Keywords:

Online surveys, academic libraries, online tutorials, learning management systems, assessment, learning outcomes, computer mediated instruction

Sustainable and effective professional development for Information Literacy: Current status and thoughts for the future

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This paper will briefly document the professional development opportunities which have been successfully organized in the Gulf region during 2013/14, using a model of decentralized teams and face-to-face workshops. Discussion will include the participant evaluations of the workshops, and a cost-benefit analysis of the programs. Importantly, this paper will then investigate and evaluate alternative forms of online delivery of IL professional development (which could also be available world-wide), and discuss the viability and comparative value of offering such options in the future.

An informal professional network was established in the Gulf region in 2005 to focus on the development and sharing of information literacy (IL) best practices, especially within academic libraries. The objective of the Information Literacy Network (ILN) was primarily to "discuss regional challenges and best practices in information literacy, and to share relevant theory and activities which participants could apply in their own institutions" (Birks & Eula, 2011, p. 2). As Birks and Eula (2011) concluded however, sustainability of the ILN, even in the face of widespread enthusiasm from participating library staff all over the Gulf region, has been difficult.

The professional development focus of the ILN has enabled successful organization of several regional conferences with international key note speakers as well as numerous local workshops, which together have involved hundreds of attendees and resulted in very positive feedback from participants over the years. The organization of such events, as in any location, has been a very time consuming and sometimes expensive exercise, exacerbated in the Gulf, where participation is entirely voluntary, and group members are widely dispersed. The conflicting demands of daily employment commitments versus the prospect of contributing to the longer term sharing of ideas and resources to develop better strategies for IL teaching are not new for participating library staff.

Within the last couple of years the high demands of the workplace, as well as the inevitable turnover of expatriate staff involved in such voluntary organizations in the Gulf, have resulted in the ILN offering few professional development opportunities. A revitalized team of librarians during 2013/14 however, agreed upon a more decentralized organizational structure for the conduct of professional development workshops, resulting in four geographically diverse workshops attracting over 400 participants. Survey results from these workshops have pointed to a high level of satisfaction with the organization and content of these workshops, but a closer evaluation of the cost-benefit analysis of such workshops is warranted.

It is important to consider whether the current model of face-to-face workshops and conferences is likely to be the most effective and sustainable model into the future, in a region which is so geographically and politically diverse. An examination of what alternative online options might be possible, and what obstacles and benefits to the viability of such options is indeed timely, as the dichotomous pressures of the workplace for organizers, as well as potential costs, are balanced against the documented value of such professional development opportunities.

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Keywords: *Information literacy, professional development, Gulf, online*

Killing Two Birds with One Stone: Boosting Information Literacy Skills of Thousands of Students by a Handful Librarians at a Large University in Germany

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Motivation and Objectives

Academic libraries in Germany have to cope with different challenges like increasing number of students, increasing learning content as a consequence of the Bologna process, altered learning behaviors of digitally enabled students, and the gap between digital literacy of students acquired in private life and information literacy skills crucial to succeed in their studies or jobs. For this reason we introduced an innovative information literacy program at our library. It is divided into three levels (beginners, proficient learners, experts) and based on an integrated blended learning approach. This enables us – the Economics and Management Library of the Technische Universität Berlin with 5 librarians specializing in teaching information literacy - to support around 3.800 students of economics and industrial engineering along their whole learning life cycle at the university. The aim of the presentation is to give an overview of the method, its advantages and the difficulties which occurred during the development of the program and course material.

Methodology

Our information literacy program presents an optimal mixture of e-learning modules (e.g. comic videos, screencasts of literature databases) and personal meetings. E-learning for self-paced learning increases the learning autonomy of the students and reduces teaching efforts for librarians. The face-to-face meetings in small groups are aimed to enhance reflective thinking among the students using collaborative learning techniques (e.g. team exercises, discussion).

Outcome

Due to the different information needs of the students during their studies this blended learning approach allows the allocation of librarians' and students' time in an optimal way. The e-learning platform at its heart connects the elements of the program and integrates the offline and online learning world into one harmonized learning experience.

Some lessons learned are:

- The new approach requires a new process in course material development.
- The main challenges comprise the division of learning content into small units and the assignment to three levels as well as the production of course material especially videos (writing script, storyboard, lines, figures, animations, permanently changing technical requirements and conditions).
- With regard to time and learning success, both librarians and students profit by the collaborative peer to peer learning model.

Using the integrated blended learning approach we contribute to innovative learning settings at the Technische Universität Berlin. Our program might serve as a model for other academic libraries and universities.

Keywords: *Learning life-cycle based program of teaching information literacy, integrated blended learning, peer to peer learning, video production*

Journeying into Library Assessment: A Case Study Measuring Value of an Information Literacy Programme at the Li Ka Shing Library, Singapore Management University

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The literature notes that a culture of assessment is dependent upon a number of critical success factors one of which being the organisation's strategic direction. The authors contextualise the paper by introducing 'responsible cost accounting' and 'business process improvement' initiatives initiated by the Singapore Management University that acted as a catalyst for departments such as the library to investigate the value and impact of their service offerings. This paper uses information literacy as a case study for understanding value at the Li Ka Shing Library where the authors documented the library's formative journey by asking questions about the value of a 'known', namely one of their flagship information literacy programmes. The maturity of information literacy programmes in institutions has evolved from being integrated into the curriculum to determining its value and impact not only for the library but also ascertaining how it has contributed towards the holistic development of lifelong learning of university graduates. In addition, increasingly today, instructional librarians are asking 'we teach, but how do we know that they are learning?' and how can we measure that? Participants will hear how through faculty collaboration and engagement, the Research Librarian for the School of Information Systems, created pre- and post-assessment surveys to determine the value of the information literacy programme.

How to identify effective assessment plans to measure learning by applying the teaching and learning design framework, which includes aligning the three components of learning objectives, instructional strategies and assessment, is outlined. Participants will also hear how the ACRL Information Literacy Competency Standards for High Education were applied in the design of the assessments for the programme. The trials and tribulations of influencing the School to incorporate information literacy learning outcomes with their own learning objectives, communicating its value, and embedding the course in the learning management system will provide participants with practical transferable tips for their own institutions.

Finally the authors draw upon the work of Oakleaf (2009, 2011) and the ACRL's Value of Academic Libraries initiative (2010), to share their thoughts on a future roadmap for information literacy assessment where considerations about the use of the ADDIE instructional design model for assessing programmes will be discussed.

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Keywords information literacy, instruction, librarians, academic libraries, assessment, value, case studies

Designing and Implementing an Information Literacy Course for Undergraduate Medical Students in Brazil

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Introduction

The Brazilian Ministry of Education has been pushing medical schools nationwide to undertake curriculum reforms, which include actions to develop knowledge and abilities on Information and Communication Technology (ICT), Evidence Based Medicine (EBM), English (E) and Independent Learning (IL). We believe that integrating Information Literacy (IL) teaching within the medical curriculum would address ICT, EBM and E, creating the grounds for developing IL. Since 2008, we have been conducting IL research among higher education students. We surveyed IL among Public Health (PH) master and doctoral students in Brazil (Vincent et al., 2013) and among PH master students in France (Vincent et al., 2013), and performed an experimental study to access the effectiveness of a short IL course (Vincent et al., 2013). For the surveys, the overall performance was poor. In the Brazilian survey, there were IL differences depending on students´ undergraduate background regarding the use of bibliographic databases. For the French study, there were contrasting differences in the nature of information sources chosen and teaching received regarding French and foreign students. The third study revealed IL improvement in the experimental group. The objective of this presentation is to describe our newly established IL course for undergraduate medical students in a public medical school in Rio de Janeiro.

Subjects and Methods

In May 2013, ninety-five undergraduate second year medical students from Universidade do Estado do Rio de Janeiro (UERJ) enrolled in the IL course. It took place in a computer laboratory with Internet access. The IL course was a newly developed module occurring within the Medical Informatics discipline. Students arranged within six groups of 15 to 20 individuals attended weekly two-hour sessions during four subsequent weeks. Expositive sessions with online navigation explored the IL concept, local Internet infrastructure, medical literature databases and journal portals, database record structure, Boolean logic and search strategies, among other topics. Reading materials, videos and hands-on exercises were posted in Moodle, an open-source learning platform. By the end of the IL course, students completed a written exam consisting of ten hands-on exercises.

Results and Discussion

Ninety-five (100%) students were successfully assessed: 34 men, 61 women. Exam grades ranged from 3.7 to 10.0; mean=8.8 (SD=1.2); median=9.0. Moodle has become a popular platform at UERJ medical school, supporting many curricular disciplines. In our face-to-face IL course, Moodle´s role was to display materials in an organized fashion and to monitor students´ navigation among them. Moodle made it possible for a sole lecturer to follow a large group of students across four weeks. Overall, students engaged in and experienced this new learning environment with a positive attitude. We developed a stimulating strategy, catching student's attention by using real life situations, for example, assessing the scientific production of a well-known faculty member. We promoted active learning through 15 quizzes and hands-on practice. We believe our IL course is a step ahead at UERJ, as there are still traditional/passive learning methods. Besides building students´ IL awareness and knowledge, we are collaborating to the ongoing curricular changes.

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Keywords: *Information literacy, medicine, undergraduate students, teaching, Moodle*

SMIRK, the evolution of a mobile IL training package

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This presentation outlines the development of SMIRK, a fully mobile version of SMILE, our web based information literacy package. It describes how we used Dreamweaver's JQuery mobile functionality to develop a fully mobile version which can be used on a variety of platforms. SMIRK also addresses some of the navigation problems with SMILE.This presentation outlines the design and development of SMIRK and the role of user testing and feedback. SMIRK (Small Mobile Information Literacy Realworld Knowhow) is constructed in small units which allow users to go directly to the content that they need and navigate through it easily. We involved the university's disability team to ensure that the package is as accessible as possible.

Feedback showed that the SMILE menus were confusing, users didn't understand why particular subjects were in certain units. This arose as we "inherited" an existing structure and then tried to fit in new content. We dealt with this by embedding direct links into VLE modules, bypassing the menu and going directly to subjects. SMIRK is structured differently, being made up of separate small units, thus giving a more flexible approach to menu construction.

Because of this, we can have different menus tailored to separate user groups:

- navigation by "chapters"
- a subject-based approach
- an A-Z list of units, and
- tailored menus for modules.

The internal navigation of SMILE also confused some users, so additional directional information was edited in to give extra guidance. SMIRK has a much simpler "back and forward" style of navigation which is common to many mobile sites and apps. This should make it much more intuitive for the mobile device user. We will test this out with a program of usability testing.

SMIRK will also be shown to a group of nursing students and feedback from this session will be used in the development of the package. It has also been publicized through our students' association newsletter, inviting students to give their feedback and ideas. Each section has a brief outline of its' learning outcomes, so sections can be used as independent learning objects. As a whole, the package aims to help develop practical information literacy skills and associated communication skills. The focus is on practical rather than theoretical outcomes, such as "Doing a presentation, or How to create a poster". Links to specific sections will be embedded in VLE modules to allow academics to use it as a form of support. Use will be monitored using Google analytics and the internal feedback forms using Google forms will be further developed.

SMIRK has its own open access web site at http://www.gcu.ac.uk/library/SMILE/SMIRK/Start.html , so anyone can use it. It will also be shared via Jorum's information literacy collection. Version 2 of SMIRK has already been released, featuring automatic text resizing and improved internal navigation.

Keywords: *A minimum of 3 and maximum of 7 keywords should be added. Commas should be used to separate keywords Information literacy, mobile devices, blended learning, online learning, distance learning, OERs*

Exploring Threshold Concepts in Scholarly Communications as Portals to Doctoral Student Success

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This paper will present findings from a pilot study which identifies difficulties doctoral students have in understanding scholarly communication concepts and proposes a threshold concept framework to enable doctoral students to move beyond these "stuck places" to become successful researchers and scholars. Threshold concepts (as first proposed by Meyer & Land, 2003) are those portals, or core learning concepts, in any discipline that represent a transformation in learning, or "seeing things in a new way". Threshold concepts are the places where students stumble or get stuck, but moving beyond them is essential for making progress. If librarians have a better understanding of these stumbling blocks, they will be better equipped to help doctoral students cross these thresholds and move towards ways of thinking and practicing in a discipline.

Researchers in a variety of disciplines have examined threshold concepts and the doctoral research process. Some studies have gone beyond the disciplinary context to explore the characteristics of high-quality scholarly research that are shared across disciplines in the doctoral process or "doctorateness" (Trafford & Leshem, 2009). In the last few years, studies have begun appearing in the library literature about applying threshold concepts to information literacy (Hofer, Townsend & Brunetti, 2012). And there has also been a new focus on defining and improving research competencies for graduate students, especially with the relatively recent recognition of the convergence of information literacy and scholarly communications (Davis-Kahl & Hensley, 2013). Although previous studies have focused on the perspectives of the experts in the discipline (i.e., faculty advisors/supervisors and librarians), Meyer and Land (2003) proposed that "a research question has opened up on the degree to which threshold concepts, as perceived by teachers, are experienced by students, and with what variation", so exploring the variation between faculty and student perceptions can contribute to a formulation of threshold concepts.

This pilot study includes doctoral students and faculty dissertation advisors in the College of Education at a public urban research university. Semi-structured interviews will be conducted with both groups to identify stumbling blocks or troublesome concepts in relation to scholarly communications in the doctoral process. Scholarly communications encompasses economic aspects (e.g., academic publishing process), legal aspects (e.g., author's rights, copyright), social aspects (e.g., global sharing and open access), ethical aspects (e.g., attribution and citation of sources), intellectual aspects (e.g., peer review, data management), and cultural aspects (e.g., the community of scholars). Interview transcripts will be coded and analyzed to identify themes. Results from both groups will be compared to chart variations in perceptions of students and faculty.

Findings will be used to identify the primary stumbling blocks to understanding scholarly communications during the doctoral research journey. A preliminary threshold concept framework can then be designed so that librarians can work with faculty to guide the development of strategies and support to improve scholarly communication competencies for doctoral students. Follow-up studies in different disciplines are envisioned for determining if there is a cross-disciplinary commonality of threshold concepts for scholarly communications in the doctoral process.

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Keywords: *Doctoral students, information literacy, scholarly communications, threshold concepts*

How May I Help You? كيف استطيع مساعدتك؟ : An Exploration of Dimensions within Arabic and North American Cultures as They Influence Library Interactions

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American and Arabic librarians and staff working at Zayed University in the UAE saw the potential to improve library interactions by developing a clearer understanding of the cultures at play in this multinational workplace. Through interviews, observations and a review of the literature, we compile and propose guidelines and cultural competencies for library staff. Working with library and University colleagues, students and faculty from Egypt, Turkey, and Gulf Cooperation Council (GCC) countries such as the UAE, Qatar, Oman and Jordan, we capture stories and illustrations representative of the Arabic cultural norms. Similarly, colleagues from the US and Canada in the library and on the teaching faculty, provide insight into the North American perspective. We use anecdotes and experiences of service and teaching and learning exchanges both within and outside of libraries to illustrate points of tension or potential misunderstanding as well as to describe best practices for productive encounters. We use our results to examine library interactions broadly but focus our study on the one on one teaching and learning that occurs in reference interviews and consultations in an academic library setting. We expect results that will be transferrable to classroom interactions and that will prompt further research. We consult research done in education, sociology, communications and business in addition to studies from library literature. Recent library and information science scholarship explores multinational perceptions of librarian competencies and offers guidelines for working with diverse users though largely does not address Arabic users. The literature in other disciplines explores Arabic and North American cross cultural communication and, in a few instances, begins to touch on the appropriateness of pedagogies employed across cultures, but does not consider teaching and learning within the library environment. This project fills a gap in the scholarship by dealing specifically with Arabic cultures and with library interactions.

Religion, tradition, history and governance structures contribute to the development of cultural norms. We explore dimensions such as comfort with ambiguity, formality, gender and traditional hospitality imperatives as well as culturally informed ideas about books, information and education as indicators of norms and expectations in teaching and learning interactions. As an example, we address use of the Arabic phrase “Insha’Allah” which translates to “God willing” and has roots in the Islamic faith but has permeated the broader culture and has come to hold various meanings. Its use in library interactions reveals a point of difference between Arabic and North American cultures’ comfort level with ambiguity or sense of personal control. This project explores questions such as: What does a librarian from the U.S. need to understand about a student’s use of “Insha’Allah” in describing her information need? Does a difference in sense of personal control or pre-determination impact motivation to engage in life-long learning or information literacy development? Should different expectations of the appropriate degree of formality in higher education influence pedagogical decisions?

We provide our findings and suggest best practices for appropriate behaviors and norms for library interactions between North American and Arabic peoples.

Keywords: *Multicultural libraries, information seeking behavior, communication*

"How Do I Write an Abstract?": Librarian Perspectives on Dispensing Qualitative and Topical How-To Advice

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Libraries are among the many knowledge and cultural institutions that provide a considerable amount of content-rich, electronically based, widely available information, the bulk of which is available to anyone with access to the internet. Libraries supply primary (collections content), secondary (value added knowledge services), and tertiary (information about facilities, hours, staff, etc.) services. This paper is concerned with exploring issues related to the provision of secondary services, specifically ones that center around guiding users through topical research and critical thinking by harnessing the subject and informational competencies of librarians. Providing a structured informational context for researchers during reference/research transactions, as well as through information literacy instruction and teaching, constitute long-standing practices within the profession. Current library literature is replete with discussions and studies on the best methods to disseminate contextual information advice to users, notably in a technologically enhanced manner (Dobbs & Sittler, 2013). Electronic pathfinders, LibGuides, and other modes of online information dissemination often involve advice on performing common or discrete informational tasks, such as what databases are appropriate for locating topical scholarly literature, or basic norms on brainstorming concepts in order to develop viable search strategies. However, librarian advice may also involve supplying a contextual framework to assist users in making qualitative decisions about their research topics. According to the American Reference and User Services Association, informational exchange between librarians and users involves recommendation, interpretation, and evaluation of information resources (RUSA, 2008). Thus, librarians provide guidance not just on where and how to retrieve information, but also on what kind of information is appropriate, how to evaluate it, and how to use it. The latter is an open-ended endeavor, with user expectations often moving beyond informational needs to the more practical, how-to requests (Westerbook, 2009).

In this paper I explore how librarians at a comprehensive academic institution approach making qualitative and how-to advice. This research is based on interviews conducted in early 2014 with librarians in several disciplinary areas, particularly professional education (communication and journalism; social work), social science disciplines (American history; political science and international relations), and scientific disciplines (chemistry; computer science). The paper discusses how librarians define in-depth advice, and gives examples of the types of interactions between librarians and users that involve such advice. It also looks at librarians' own perception of the place of their expertise within the iterative process of research. In addition, the paper examines whether librarians think of themselves as figures of authority, and in what sense, and how this impacts their perceived role in the research process. Lastly, the paper looks at librarians' comfort level regarding a philosophy of public dissemination of disciplinary and qualitative advice, particularly through technologically mediated means.

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Keywords: Research Advice, Disciplinary Advice, Qualitative Advice, Librarian-User Interaction

Media literacy and theatre audience

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In the globalized information society, the internet and especially on-line social networks are more and more used to inform the readers about culture. The main objective of this study is to define how the theatre audience today receives the information about theatre productions and how media literacy affects this process. We try to determine what media is crucial for their decisions: theatre newsletter, printed newspapers, magazines, radio, television, theatre web sites, news portals, Facebook or YouTube. We will also try to determine how the theatre reviews affect the visitors: do they read the reviews, do they trust them and how relevant is the review in their decision to see a certain production. We have used Zagreb as a case study, but we also compare results with other researches in this field. We want to establish an evaluation model applicable to other cities. In the case study we mainly used quantitative research methods. A questionnaire was used to ask 300 theatre visitors in different Zagreb theatres how they found out the information about the theatre productions they were visiting and other questions relevant for this research. We also analysed how many Facebook users like the theatres' Facebook and YouTube pages, and how often they comment on the productions. We also tried to determine how age and education of theatre visitors is relevant for the use of media through which they receive the information on theatre productions. We also used qualitative research methods, with interviews with theatre PR and sales managers in order to see what their audience strategies are, what methods they use to reach the audience and how they evaluate their sectors work. In analysing and commenting on the results of this research, apart from similar studies we also consulted the works of renowned researchers in this field: Sonia Livingstone, Renne Hobbs and Darko Lukic. This study will show how different aspects of media literacy affects ways in which the theatres reach their visitors and attract them to their productions and hence will determine the importance of different media in this process, with a special emphasis on theatre web and social network pages. Therefore we believe that this research will give relevant scientific results, an input to the better understanding of information and media literacy.

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Keywords: theatre, theatre audience, media literacy, social networks

Teaching Information Literacy at the University of Zagreb School of Medicine – an Example of Successful Library and Faculty Collaboration

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With new medical and scientific knowledge emerging every day, effective medical education has to prepare future physicians to practice and learn in an ever-changing clinical environment. The curriculum of medical schools has to be competency-based, enabling students to acquire both core and professional competencies as well as knowledge and skills for evidence-based decision making, effective problem solving and self-directed lifelong learning. A well designed program of information literacy is an important component in the development of critical thinking, logical inquiry and decision making.

Central Medical Library (CML) affiliated with the University of Zagreb School of Medicine participates in educational programs of its parent institution at all levels, developing different teaching modules aimed at acquiring skills necessary for identification, obtaining and evaluation of information, as well as their usage in an ethical manner. As a part of the graduate programme, CML participates in mandatory and elective courses in both Croatian and English track programs. The course *Introduction to research in medicine* is vertically organized, corresponding to the students' ability to comprehend research methods in medicine, data analysis and publishing of study results. CML's modules in graduate courses provide students with an introduction to the characteristics of medical literature, methods of information dissemination, effective searching techniques and systematic organization of information, but also familiarize them with the principles and practices of evidence-based medicine. In the PhD programme librarians from CML aim to provide the students with an advanced level of information literacy, including modalities of critical appraisal of scientific papers, recognizing credible sources of medical information, the importance of different bibliometric indicators and appropriate use of information.

Since evaluation of educational impact is an important part of every teaching programme, CML participates in different appraisal activities. In the academic year 2011/2012 an anonymous survey was conducted in order to determine students' perceptions and attitudes toward information literacy. Moreover, librarians from CML are trying to examine the effectiveness of teaching methods and course content. Pre and post knowledge surveys consisting of course learning objectives framed as questions that test mastery of particular objectives were prepared for that purpose. The surveys are being conducted throughout the academic year 2013/2014, and the results of this, as well as other appraisal activities, will be presented at the ECIL conference.

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Keywords: *Information literacy, medical schools, medical students, medical information, academic libraries,teaching methods, teaching evaluation*

Integrating Information Literacy in the Health Sciences Curriculum: Successful Library/Faculty Collaboration

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This paper will present the results of a recent collaborative initiative implemented by librarians and faculty at Western Michigan University to improve the information literacy, research, and writing competencies of approximately 400 students per year in the College of Health and Human Services. Faculty observed that students in upper-level courses were not sufficiently prepared in these areas, and asked the Libraries for help.

Librarians and faculty developed an online program that targeted those students most in need of additional information literacy instruction. Students are required to take a pre-assessment of health information literacy, and those who do not pass the pre-assessment are required to complete an eight-week, librarian-led online course. Students will complete the assessment or course at approximately the mid-point of their university studies. This allows students to integrate knowledge of information literacy concepts into their research and writing activities in their advanced health sciences classes and in their later careers as health science practitioners. Through a series of assessments before, during, and after the course, the librarians and faculty are working to gather data demonstrating the importance of information literacy to successful student learning in the health sciences.

This paper will explain how the program was developed to meet student learning outcomes and faculty needs. The paper will discuss issues of scalability, assessment, faculty-librarian collaboration, administrative policies, pedagogy, and technology. The paper will also describe how both the pre-assessment and the course content evolved to more effectively reflect the curricular gaps identified by faculty in the advanced health sciences classes.

Keywords: *Library, Health Sciences, Curricular Integration, Assessment, Collaboration*

Teaching Information Literacy to High School Students in Germany: Cooperation between University Libraries and High Schools

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High school students are an important target group for the university libraries in Germany. According to German information literacy statistics, about 25% of the information literacy courses of the university libraries are aimed at high school students or teachers. This contribution discusses the form and content of the collaborations between university libraries und high schools. A special focus lies on the role of library networks within this process.

The importance of the development of media and information literacy in schools and high schools has been expressed in many political statements and reports. As a consequence, the Bavarian library network has developed information literacy standards for high school students and also for schools and libraries. The standards include

1. knowing the regional accessible information resources and libraries
2. using basic search strategies
3. accessing the needed information
4. locating quality controlled electronic resources
5. using and evaluating the information gained

On this basis, the Bavarian Library network and the Bavarian ministries of education and science have signed a cooperation agreement.

As a best practice example, this paper presents the actual activities of the University Library of Bamberg which, three times in a row, received certification as an educational partner of schools in Bavaria. Topics of the modular courses for high school students are actual methods of literature and information search, citation and reference management and scientific work methods as “university students for one day”. The courses consist of interactive exercises and team work. Upfront teaching is avoided. The university library also conducts training courses for teacher in collaboration with the Bavarian ministry of education which cover e.g. research strategies, evaluation of internet resources and plagiarism.

The university library intensively promotes their courses at the schools and offer a wide range of information material print and online. All courses were evaluated and regularly optimized.

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Keywords: *Information literacy, university librar , high school, Germany*

Information Literacy in Austria

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The aim of this contribution is to present the state of the art of information literacy (IL) activities and the level of IL skills in Austria, to compare these to the international IL landscape and to discuss challenges and critical success factors for the development of teaching libraries in Austria. The overview presented is based on an analysis of Austrian websites addressing IL, on a review of the relevant literature, curricula of schools and universities, on interviews, personal observations, and on a survey which investigated the promotion of IL at Austrian university libraries (Zemanek, 2012).

Empirical studies on IL in Austria primarily relate to the education sector but also concern IL in everyday life, such as e-health literacy. Of particular interest are the internet literacy of pupils and the competence of students in dealing with specialized electronic resources of libraries. There are initiatives and frameworks to promote IL, mainly in the education sector.

Media and information literacies are regarded as important competencies in Austrian school education and have been introduced as learning goals into the curricula. Information literacy is crucial for the preparation of a so-called pre-scientific paper, which is an element of the centralized upper secondary school exit exam at all higher general education schools since 2014.

Based on the concept of the "teaching library", the academic libraries in Austria are moving from providing traditional library instruction to promoting information literacy. The results of a survey (Zemanek, 2012) describe teaching library practices at university libraries in Austria. Necessary skills and tools for teaching IL have recently been integrated into the curriculum of the professional training of librarians in Austria. Since 2013, the Commission for Information Literacy of the Association of Austrian Academic Librarians provides a portal for information literacy, which contains information on the theory and practice of IL and offers a platform for the sharing of information, experiences and learning and teaching materials. TeachMeets were introduced in Austria as a meeting forum to share ideas and good practice for teaching IL, not only for teaching librarians but also for faculty staff teaching IL (Zemanek, Rohrmoser & Lach, 2013).

To succeed in promoting IL at all levels of education it is important to realize that IL is a life skill. Teaching librarians need to understand the concept of IL and have to develop professional identities as information specialists who are also teachers (Webb & Powis, 2004). This is a development Austrian librarians are currently undertaking.

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Keywords: *Information literacy, Austria, teaching library, pupils, students*

The Themenraum (Topic Room) Project: Matching Current Topics, Civic Education and Digital Literacy in Berlin's Central Library

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Introduction

Information literacy is a key factor for lifelong learning (Lau, 2006) and digital skills are indispensable in modern information societies. This is of specific relevance for public libraries, which serve people of all ages, backgrounds and abilities. Public libraries are, of course, "on the front lines of digital inclusion and life-long learning" (ALA, 2012). In this way, so is Berlin's Central Library (Zentral- und Landesbibliothek Berlin, ZLB), Germany's largest public library and one of the most frequently visited cultural and educational institutions in Berlin.

How Current Topics, Civic Education and Digital Literacy Connect

"Civic and political participation increase with online activity" (ALA, 2012) implies going beyond a library's standing collection of books, periodicals and other printed resources, and searching for new ways of curating free, online-content as well. In late 2012, when the US presidential elections took place, we thought of a way of presenting various interdisciplinary library resources together. However, we quickly realized that it is impossible to cover a current topic without live-access to online digital information resources. In order to empower our patrons to engage in political and cultural topics we need them to access, utilize and become familiar with mobile devices and online information. In addition to books, DVDs, CDs, etc. from a library's standing collection, online contents must be selected, aggregated and presented adequately and in a comprehensive manner.

The Topic Room iPad Application aggregates tweets and blogs, including links relevant to the given topic and a single website that we want to feature—a subject dossier, for example, from our cooperation partner BpB (*Bundeszentrale für politische Bildung* or Federal Agency for Civic Education). During the last year, we have optimized the app through various methods such as building up a content management system in the app's backend and refining the RSS and tweets channeling via full text or hashtag filter. The respective topic curator could easily configure their own application via CMS.

Lessons Learned

This was an entirely new task for librarians, but in a way very familiar to them as it was all about selecting and contextualizing information. However, it was important training for our staff, as we have "to ensure that new librarians are prepared for leading digital literacy programs" (ALA, 2012). There is still is a long way to go, but the project has been a critical first step. Another important insight that we have gained is the following: it is not enough to simply provide access to online resources and hardware. Rather, we must train our patrons in digital skills. From summer 2014 onward, we will gradually extend our digital literacy services within the Topic Room project, e.g. guided tours with a focus on explaining digital components, iPad introductions, and a workshop series in late 2014 about data security on mobile devices. At present, we already offer digital literacy services, e.g. e-book consultation hours or newspaper-apps on tablet. Without the initial steps that we had taken in the Topic Room project, experimenting with iPads and mobile applications, we would not be able to offer any of the digital literacy services that we currently have. Digital access is of increasing relevance with regard to information equity. To conclude, libraries today should offer information and provide access to hardware while remembering to offer digital literacy services as well.

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Keywords: *Digital literacy, digital empowerment, public libraries, information literacy, digital divide*

Changes in the Content of Information Literacy Course Due to the Transition to Web-Scale Discovery

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Background

The Central Library of Brno University of Technology in Brno (BUT) in the Czech Republic runs an e-learning course for first year students providing them with the basic information needed to improve their information literacy. The content of the course has changed due to the installation of the web scale discovery Primo. Students are now briefed to use Primo for searching all the information content available on BUT. Because there is no further need to have individual chapters devoted to library catalogue and databases, it provides space for new issues that should be included in the information literacy course (e. g. presentation of information). With the new run of the course this semester we did a usability study of Primo that informed us about other changes that should be done.

Methods

1. The usability study took place with 3 different groups of 5 first-year students: Students who had been taught how to use Primo and who had not finished the information literacy course before the usability testing took place;
2. Students who had completed the course before Primo was adopted, but who had been shown general principles of searching in different electronic information resources;
3. Students who had not completed any of the information literacy courses.

Every student was asked to perform the same representative tasks using the site. The tasks were designed to examine whether students were able to use the main functions of the system and find the needed information. Students were asked to comment on what they were doing. The student activity in the system and their comments were recorded using Adobe Captivate software.

Results

The usability study gave us a lot of useful information about the information behavior of the students. We could see that students who had been given instruction in how to construct search query and how to use different searching interfaces were more efficient at finding needed information and using the system, so we should try to reach a wider audience. The ability to use the discovery system gives students access to a broad range of expert information useful for their studies and academic career.

We realized that we have to focus more on the general principles of searching (e. g. building a good search query) and include the topic of knowledge organization into our courses and tutorials. The study also showed that the system is not fully intuitive and there are still some features that need to be explained. It informed us about aspects of Primo that could be modified to create a better user experience.

Conclusion

The findings could serve as an inspiration for other universities in designing their own information literacy courses and for their decisions about implementing web scale discovery. The test scenario could be used for further usability testing.

***Keywords**: e-learning, information literacy, Primo, academic library*

Information Seeking and Information Behavior of Academic and Postgraduate Students at the University of Botswana

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Information plays a critical role in people's lives. It is very important that people know how to locate, evaluate and use it. The increase in availability of information in the internet has affected information seeking behaviour. "Bates (2010) defines information behaviour as the currently preferred term used to describe various ways in which human beings interact with information and in particular, ways in which people look for information and how they use it." " Wilson, (2000) views information behaviour as the totality of human behavior in relation to sources and channels of information, including both active and passive seeking and information use." He indicates that "information seeking takes place as a result of a need to satisfy some goal". Research on online information seeking behaviour by young people talks about the need for one to have skills for searching and dealing with online sources of information "(Eynon & Malmberg, 2011)". This brings an important point raised by "Krolak (2005) that libraries are dedicated to providing free and equitable access to information for all, be it written, electronic or audiovisual form". It is also noted that libraries play a key role in creating literate environments and promoting literacy by offering relevant reading and research materials for all level. "Krolak,(2005) asserts that libraries embrace the social responsibility to offer services that bridge social, political and economic barriers, and traditionally make an effort to extend their services to marginalized people". This paper will discuss the information seeking and information behaviour patterns of academic and postgraduate students at the University of Botswana (UB). It will cite observations made by the Humanities Subject Librarian on the information seeking behaviours of these two groups and how these have influenced the design of services offered to these two groups. Further, it will discuss efforts by Library Management including strategies put in place to ensure that the department plays a proactive role. As "Krolak, (2005) indicates, it is libraries' responsibility to assist in finding, using and interpreting appropriate information that opens up opportunities for lifelong learning as well as literacy enhancement". Subject Librarians at UB library assist in ensuring that these groups access information effectively.

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Keywords: *Information seeking, information behaviour, information literacy*

Information Literacy Teaching: The Trainer Librarian

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We believe that librarians play a crucial role in the development of information-literacy and we are convinced that unique personal attitudes combined with professional skills which cannot be taken for granted, are needed. Our training project aims to improve those professional skills needed by librarians to deliver effective information-literacy courses to college students. In particular, action is needed to improve the strategy of the message, the verbal and non-verbal presentation, the strength of the topics, the enhancement and psychological management of the group.

At the end of the training the participants will be able to apply these methods and techniques to design a training program on their own; know and apply the basic methods and techniques for the management of a learning classroom, and learn the basic criteria for evaluating the effects of a training intervention. Addressees of the project were the librarian staff in charge of reference and information-literacy services at the University of Bologna, about 80 people. The methodology of the training was to promote the transfer of theoretical and methodological implications into practice. In the scheduled project the following teaching techniques were flexibly combined: interactive lectures, training exercises, behavioral simulations, and experimental teaching. The aim has been to promote the integration of cognitive learning with emotional and playful learning, and to constantly enhance the work experience of the participants. The project consists of three teaching modules: theory, workshop and follow-up. Theory and workshop (26 hours) took place in the first part of the year, while the follow up is planned after 12 months of teaching activity.

In the theoretical part we considered the methodology and techniques for designing and conducting a training intervention: andragogy particularities, models on the learning style and their impact on training programs. We focused on the difference between passing information to facilitate learning, the teaching peculiarities, the attention, comprehension and memory management of learners and their group interaction. During the workshop we compared training experiences; there were six groups of about six librarians who had to plan a 20 minute 'lesson on a topic chosen by the team itself. The group had to choose one spokesperson to simulate the teaching unit and had to coach him/her during the performance by focusing on the guidelines for effectiveness studied in the first module. Then, the group of librarians in the classroom evaluated the performance of the designated spokesperson highlighting the strengths and weaknesses of his/her performance. The session ended with any in-depth comments and synthesis by the teacher.

During the follow-up, the trained librarians are supposed to keep a logbook where they can record their practical teaching experiences made during their real training activities. After 12 months there will be a meeting to assess all these tracks of teaching recorded by the participants in order to verify the impact on the students of the content learned. This last moment will have also the aim to socialize and strengthen the new role of the trainer librarian.

***Keywords**: Teaching, information-literacy, andragogy*

Information Literacy at Khalifa University: its humble beginnings and 5 years on

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Aim and Objectives

The aim of this paper is to discuss the history of Information Literacy at Khalifa University of Science and Technology in the United Arab Emirates, from the University's inception until our present day and look at the impact that the Information Literacy program offered by the librarians has had so far on students' behavior in seeking and using information. The focus is mainly on information seeking behavior of students subjected to Information Literacy modules through their 'Selected Topics' course in the first year of preparatory offered by the librarians, versus students who had no Information Literacy training due to direct entry into the programs or the nonexistence of training during their start of studies at the University in August of 2008. The effects of students' exposure or lack of exposure to Library and Literacy skills in their primary and secondary year's education prior to arriving to the University will also be looked at. In addition, challenges facing the Librarians past and present will be discussed. The University spans across two campuses and is the first co-educational Government University in the United Arab Emirates. The student body comprises mainly of UAE Nationals in addition to expatriates of mainly Arab origins.

The preparatory entry level for these EFL or ESL students focuses on passing the IELTS test with a minimum score of 6, to enable them to go into their programs of choice thereafter. The emphasis during this preparatory year is mainly on English language learning, such as Reading, Writing and Listening, in addition to general studies which comprises of Math, Physics and IT. A course called 'Selected Topics' was introduced and comprises research skills, in which the Librarians have a chance to connect with students and deliver their Literacy topics.

In addition, the research focuses on the preparatory year faculty and their use and collaboration with the Library and Librarians, the history of the program and how the changes experienced over the years have impacted on the effectiveness of Library delivery and the skills acquired by students. A brief discussion on other types of faculty and their attitude towards Information Literacy in addition to their collaboration with the Librarians will be included.

Methodology

It has been decided that various methods of data collection will be used for the purpose of this research. Results from data gathered through quantitative methods will be used to measure variables and verify existing theories. On the other hand, qualitative data will be gathered mainly through direct interviews. The interviews will be a combination of open and closed questions.

The experiment will focus on all sections of the preparatory year program, in addition to selected Undergraduate and Graduate students from various engineering departments. Mature Graduate students from the Department of International and Civil Security will also be surveyed and compared to the preparatory students. The methodologies to use will mainly be surveys, in addition to individual interviews with selected faculty members, Librarians and the Head of Libraries. Students from each category will be asked to go through a short online exercise based on modules taught through IL instruction to determine their knowledge in using resources available through the library.

Conclusion

Recommendations will act as a strong basis for future changes, which will greatly contribute to the ever evolving and enhanced Information Literacy program throughout Khalifa University. It is hoped that this study will emphasize the additional support the Library needs to deliver Information Literacy to students of all levels and programs. In support and encouragement of all parties involved, recommendations will be suggested at the end of this research. These recommendations are seen as achievable objectives, which require the dedication and support of all involved.

Keywords: *Information Literacy, Middle East, Literacy skills, University students, Library skills, Foundation year, Preparatory year students*

Introducing Information Literacy as a Credit Course for First Year Students at UD: Some Reflections

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Information literacy (IL) is a learner centric instructional template that, if applied strategically, can cultivate the development of independent, self-reliant learners. In fact, IL skills instruction cuts across all disciplines. IL practice is not educator dependent (NFIL, 2014). It is both the understanding of concepts and the acquisition of skills that support independence in identifying, accessing, evaluating, organizing and communicating information. IL permits individuals to learn, work and participate in the global information society and is relevant to all academic disciplines and all levels of education (University of Vermont, 2006). It is a fact that lack of information literacy is partly the cause of underutilization of existing information and communication technologies (ICTs), and information resources. For that reason, libraries are now realizing their role and are struggling to respond to these challenges (Baro, Endouware, & Ubogu, 2011; Walker, 2006). This was also the background of a drive to start a credit course (2 hours) of IL entitled *"Learning and Research Skills"* for first year students at University of Dammam, KSA. University of Dammam is the first university in KSA to introduce IL as a credit course. The specific objectives of the presentation are to: 1) share the experience of introducing the credit course to the first year students at UD and to review its initial outcomes; 2) find out the students' opinion about this course and its impact/utilization in other courses of study; 3) review the problems encountered and discrepancies found in the course; and 4) recommend some revisions for the coming year course in the light of this experience.

To achieve these objectives, unique qualitative techniques of data gathering were employed, including a literature review, personal observations/experience, and gathering students' open-ended opinions. In 2013, a credit course was designed, approved and implemented for first year students at University of Dammam. After teaching the first semester, the researcher as an instructor reported her reflections to the authorities and requested for breaking the course into three levels (i.e., basic, medium and advanced levels of contents). Because the course contents were highly advanced and rich, the instructors and students felt it was difficult to cope with all of it. Eventually, a briefer version of medium level contents was introduced in the second semester. For the feedback, a questionnaire containing open and close ended questions was prepared for anonymous feedback from the students. Personal interviews of five students were also conducted to get in-depth feedback. The analysis of the 37 valid responses show that students were satisfied with the course. They appreciated the type of practical assignments given to them. Students mentioned that they had learnt a lot through these practical assignments and the skills learnt in this course had also supported their other assignments for other subjects. They happily mentioned that these skills have enhanced the quality of their work and they are proud of this. They further added that now they are aware of plagiarism and how to avoid it through proper citation and referencing with the help of citation management software. The students suggested that the theoretical part of the course should be reduced and more time should be allocated for hands-on-practice sessions. In light of these findings the researcher recommends that more customization in the contents and methodology of teaching is needed..

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Keywords: *Information literacy, IL credit course, Saudi Arabia*

Development of a Program to Blend Information Literacy in an Effective Way

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The library of the Amsterdam University of Applied Sciences (HvA) aims to improve information literacy courses by mixing face-to-face workshops and online tools in a smart way. Furthermore, this Flipping the Classroom concept should lead to a reduction of the use of library staff. This presentation shows the development of this blended learning program so far, the difficulties involved and the key factors for successful implementation. HvA's main purpose is to create information literate students. In what way could blended learning contribute to this goal? Existing research shows different results. Anderson and May (2010) indicate that all instruction methods (online, face-to-face, blended) are equally effective. Other researchers advocate the use of blended learning (Kraemer, Lombardo & Lepkowski, 2007; Maclachlan et al., 2014).

Integration in the curriculum and collaboration with the faculties are essential for developing and implementing blended learning in an effective way (Anderson & May, 2010). Within the HvA collaboration to develop course integrated instructions is partly implemented but complementary efforts need to be made.

Blended Learning does not automatically mean a decrease in the use of library staff. However, this could be reached by designing a smart program as well as a reshuffling of the roles of teachers and librarians (e.g. teachers could take over parts of the face-to-face workshops). If you were only to consider the decrease in face to face resources it would seem obvious to substitute face-to-face instructions by an online lecture. However, this could easily divert attention away from the real purpose of the workshops which is adequate information literacy skills for students.

An online course, 21 student-to-student videos on smart searching, online tutorials and additional web lectures are all part of the blended learning program. During the process of redesigning our information literacy training the library consulted:

- Educationalists, lecturers and students;
- The working group "Learning tomorrow". This is an HvA working group in which the library participates; and
- Known best practices and similar surveys.

In order to monitor the effectiveness of blended learning the HvA library is working on a test which measures increased knowledge and skills of students. This is not yet a completed success story but an overview of the results so far. During the presentation experiences will be exchanged and best practices will be shared between presenters and the audience.

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Keywords: blended learning, flipping the classroom,.information literacy.

Seizing the Opportunities Presented by Change: Developing & Implementing Collaborative Information Literacy Programs with Team-based Teaching

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In September 2012, the tertiary institutions in Hong Kong went from a 3-Year University system to a 4-Year system. Locally this change was called "3-3-4". The changes presented a rare opportunity to move from what had mostly been typical library instructional offerings mostly composed of "one shots" to a more integrated, collaborative and edifying information literacy program across the curriculum and across several year groups.

This presentation describes how one institution [a Government supported PhD granting Research University] piloted and launched innovative and collaborative programs, through team teaching, using both face-to-face and blended methods. It will add to our knowledge in how collaboration on a unit or departmental level, using team-based methods can achieve broad results with limited staffing.

Background

For twenty years, our Library offered the usual menu of information literacy instructions: orientation programs, course-related classes, database workshops, web-based tutorials, and for a number of years, even a credit-bearing information literacy course. To support pedagogical reforms, the Library promoted itself to faculty and students as their partners in teaching, learning, and research via various channels.

Seizing the Opportunity for Change

3-3-4 gave all academic units the impetus to re-develop their programs and classes, especially to incorporate more critical thinking and research opportunities. These changes occurred within programs and through newly developed "Common Core" classes. In particular, the re-designed English language curriculum for the 4Y degree (with changes in content, coordination , and teaching) combined with a 2,000 person increase in undergraduate enrollment drove the launch of a new integrated information literacy program via collaboration with the Center for Language Education (CLE)'s writing courses. Starting from pilots in the 2011-12 academic year, the library has been able to integrate its instruction into the writing courses and assignments required of all first year students in all majors, and the majority of all second year students in all majors by 2013-14.

Collaboration & Team Teaching's Rewards

The CLE courses were taught by teams of instructors, and Library instructors also taught face-to-face and created e-learning objects and assessments via teamwork. The required coordination between and within the different the Library and CLE will be described, as well as how to nurture the spirit and practice of cooperation in devising the students' assignments and assessments. It will also describe the methods used to collect and share feedback, to plan and implement changes in assignments based on the feedback. In addition it will report some assessment outcomes , as well as feedback from students and partners. We will share how this challenging but stimulating process created opportunities to learn professionally on both sides to achieve the goal of helping students develop their information literacy skills.

Keywords: *collaboration, team-based teaching, information literacy, Hong Kong, China, blended teaching*

Taking Active Learning to the Next Level: Increasing Student Engagement by Blending Face-to-Face Instruction and Digital Learning Objects

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The instruction librarians at a four-year, private university developed a multi-year information literacy instruction program to meet recently implemented information literacy learning outcomes in the university's new core curriculum. The sequential information literacy instruction program includes two required library interventions in the first year - a tutorial to introduce students to basic information literacy concepts and a face-to-face library instruction session to build on the concepts learned in the tutorial. This structured program has presented many opportunities for the librarians to experiment with and assess creative and innovative approaches to instruction. In this presentation we will discuss one such approach that hybridized the in-person library instruction sessions attended by 1,273 first-year students.

During the face-to-face intervention, the instruction librarians were expected to introduce students to advanced search strategies to help them find relevant information for their research topics and to evaluate that information for quality. In order to adequately incorporate both of these learning outcomes into one 50-75 minute session, it was decided that a hybrid approach was necessary. Hybrid, or blended learning is a method of instruction in which students learn through a combination of face-to-face instruction and computer-mediated activities. The hybrid instructional method allows multiple opportunities for student learning, can increase student motivation to learn and respects diverse learning styles.

To hybridize this session, we developed a short tutorial that students completed as homework introducing them to six advanced search strategies through videos and guided live searching. Additionally, the paper-based, active learning exercise the students completed in class was "gamified" and transformed into a digital learning object (The RADAR Game *http://electra.lmu.edu/TheRadarGame/story.html*) to increase student engagement and learning. Gamification is the process of transforming a non-game instructional activity using game design thinking to increase motivation and engagement. We will discuss the game design components used in the redesign of this active learning exercise to meet the goal of increased student engagement. Some of the gamification techniques to be discussed include motivational feedback, collaboration, and competition.

The results from two assessment surveys will also be discussed. The first survey was given to a stratified random sample of 300 students to measure their perceived learning and satisfaction with the library instruction session. The second survey was administered to all instruction librarians who taught three or more of these in-person instruction sessions to measure the perceived student engagement. Preliminary results indicate high levels of student engagement and learning. At the conclusion of this presentation, attendees will be able to describe the hybrid teaching method and best practices, be able to apply the hybrid teaching method in their own institutional or local context, and be able identify the best practices for designing and incorporating digital learning objects successfully.

Keywords: *Hybrid instruction, digital learning objects, blended learning, gamification*

If You Build it, They Will Use: Creating and Sharing Open Educational Resources to Advance Information Literacy

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Since 2010, the library at the Institute of Technology Tallaght (ITT Dublin) in South County Dublin, Republic of Ireland, has been developing a suite of interactive online information literacy tutorials covering research, referencing, plagiarism and core academic skills. These open educational resources (OERs) provide users with a vibrant, challenging learning environment and facilitate flexible, 24/7, independent learning. The learning objects are accessible via multiple delivery platforms and are available for reuse under Creative Commons licence via national and international teaching and learning repositories.

This paper outlines the development of these OERs and how the creation of these learning tools has provided students with a distinctive learning experience at ITT Dublin, facilitating their transition to higher education (HE) and advancing information literacy skills. The OERs promote excellence in teaching, learning and assessment, meet the needs of a variety of learning styles and facilitate active student engagement through a range of learning activities, interactions and quizzes. The paper will focus on the pedagogical foundations of these resources and will discuss how the digital tools have been integrated into a range of academic modules across all disciplines and levels of study, helping to embed information literacy into the curriculum. The learning objects have had significant usage (over 5000 completions to date) and the author will discuss how the resources have contributed to improved academic performance and created an environment that supports student centred lifelong learning. The paper will outline how the OERs have been extensively reviewed using a range of evaluative techniques, with feedback being used to inform the ongoing development of the resources. The paper will highlight the range of challenges and lessons learned during the design phase and will discuss plans for future development which include the availability of the resources in different languages and via new platforms.

The paper will detail how the creation of these resources has enhanced local collaboration at ITT Dublin and contributed to the development of expert groups and communities of practice. The paper will also highlight how these innovative resources have added significant value to the global educational community; the OERs created are sustainable, SCORM compliant resources, which have been shared, disseminated and reused nationally and internationally via repositories such as the NDLR in Ireland (http://www.ndlr.ie/), JORUM in the UK (http://www.jorum.ac.uk/), and PRIMO in the USA (http://www.ala.org/CFApps/Primo/public/search2.cfm). The OERs have been viewed or downloaded in over 25 different countries and are an example of best practice teaching and learning resources.

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Keywords: *Information literacy, open educational resources, reusable learning objects, online learning, higher education, academic libraries, Republic of Ireland*

PECHA KUCHA

From how to why: Critical thinking and academic integrity as key ingredients in information literacy teaching

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Many students master the basics of information literacy but still struggle with academic writing and thinking. After years of teaching information literacy we experience that students lack a deeper awareness of academic integrity. Typically, focus has been on technicalities of searching, citing and referencing, and notions of "cheating" and "how to avoid plagiarism" often take the place of the – in our view more important – discussion on the deeper reasons behind academic norms. Building up a new online resource on information literacy, we aim to shift the focus and make students reflect more on their role in Academia and accordingly also on their information choices. The resource is made up of four components. The first component, learning strategies, helps students improve their reading and writing of academic texts and thus enhance the learning process. The second component, information searching, focuses on the variety of resources available and techniques students may apply to retrieve relevant information. The third component, evaluation of sources, is often perceived as challenging to students. It is therefore essential that they acquire criteria for evaluating the quality and relevance of information sources. The final component, academic integrity, aims to make students understand that using sources in a correct and ethical way is an integral part of academic practice. Each component contains a short introduction to the subject, interactive activities, engaging video messages and a "learn more" section to achieve a deeper understanding of the subject. Our approach differs from many existing resources by our main objective, which is to train the students' critical thinking in order to enhance their general learning outcome.

UiT requires all departments to teach students information literacy. This project will accordingly help departments meet this requirement. The online course has been received with enthusiasm among academic staff, who clearly see the need of such a resource. In addition, flexible education is part of the university's official long-term strategies to improve learning opportunities for off-campus students. Our project thus fits well with the university's central policy. The online resource will be launched for beta testing in September 2014, in cooperation with five different departments at our university. After final evaluation, the online course will be freely available to everyone under a Creative Commons license, both in Norwegian and English. The design of the course, with a final test covering all four components, allows it to function as an alternative as well as a supplement to the traditional on-campus courses.

In this talk we present the idea and purpose behind the course, exemplified by highlights from the online course. In particular we discuss the importance of engaging students in thinking critically about information and academic research.

Keywords: *Information literacy, critical thinking, academic integrity, online resources, flexible education.*

A Research into Information Literacy Skills of Students at the University of Zagreb

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The National and University Library in Zagreb plays a key role in the training and education of the so-called 'Google generation', with regard to the development of information literacy skills in processes associated with lifelong learning. As the central library of the University of Zagreb, it assembles and maintains all relevant collections (in all scientific fields), which are essential for the university as well as the broader academic community and researchers, with the purpose of efficiently supporting educational, instructional and research processes. The University of Zagreb is structured into 29 faculties and 3 academies, with 39 libraries across all its units. Information literacy in the academic sector is primarily implemented in activities and contexts related to the university library and courses, and is somewhat more complex owing to its being additionally subject to the interaction of a number of dynamic contextual factors (Špiranec & Banek, 2008).

The central part of the presentation will focus on students, the largest group among the Library's users, and in it we will try to establish the level of their information literacy skills using the following parameters: their use of open access resources, IT, the analysis of procedures that students use in their search for information, as well as locating, evaluating and, finally, adequately using information. These parameters have been analysed based on a questionnaire that students filled out which consisted of 20 questions structured in accordance with the guidelines set out in the 2000 ACRL Information Literacy Competency Standards for Higher Education.

Although there have been similar surveys at several Croatian faculties (Škorić, 2012), the Library, as the University's central library, has the principal responsibility to define and develop for its users an information literacy programme in relation to the processes of lifelong learning and to promote library products and services.

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Keywords: *Research, information literacy, students, National and University Library in Zagreb*

Empowering the Student: Using Mobile Technology to Enhance Information Literacy

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Zayed University is a gender-segregated school. Classes and areas are arranged to ensure that male and female students will never occupy the same space. The library however, is a shared space. There is no separate library for each of the gender populations; therefore, we must find creative solutions to adhere to university standards. Our library serves female students in the morning, and male students in the evening.

When conducting information literacy classes, a vital part of the experience is a physical tour of the space to introduce the concept of libraries to students, many of whom have never visited a library. Gender segregation became problematic for the issue of library tours. Occasionally, a male information literacy class would take place during female library hours, but these male students would not be able to tour the library or visualize our services. Our solution was to create a self-guided audio tour that the male students could utilize during the male library hours. Zayed University is a one-to-one school and every student is issued an iPad. This tour uses QR codes located at each different area of the library that our students can scan with their iPad or other mobile device and hear about what that particular area offers. In conjunction with a library map, students can navigate to any point in any order, or just listen to the areas that interest them and continue another day. This tour is also made available to female students, which has freed up the librarians' time to do other work.

In a sense, this has become our version of information architecture. Rather than websites though, we are using our information-rich space, the library, our main content space, by teaching and guiding our students to make the most efficient use of information. This tour is being embedded into the curriculum for information literacy sessions by becoming a pre-requisite before teaching the course. By completing the tour before the librarian visits the class, the students are now able to conceptualize where the information is located and how to access it.

This Pecha Kucha presentation will illustrate the process used to create the audio tour, from selection of the particular software to technical issues along the way. It will also highlight the targeted number of students and the percentage that we reached, compared to in person tours used previously. Finally, survey results from satisfaction quizzes (the last QR code on the tour) will be shared.

Keywords: *Information architecture, QR codes, digital empowerment, academic libraries*

Information Literacy and the Quality of Higher Education Programmes in Sweden

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Universitetskanslersämbetet (the Swedish Higher Education Authority) has the task of evaluating all higher education in Sweden. The Government has laid down a qualification descriptor for each qualification awarded by the higher education institutions. Irrespective of the organisation of the studies that have led to the award of a qualification, the quality of the courses and programmes must always be high enough to ensure that the goals laid down in the qualification descriptor are attained.

The overall evaluation should be based mainly on the students´ independent projects together with the institutions´ own self-evaluations.

The targets in the qualification descriptors are grouped under three headings, or forms of knowledge, that apply for all courses and programmes:

- Knowledge and understanding,
- Competence and skills,
- Judgement and approach

The panel must propose evaluation of each programme it assesses using a three-level scale:

- Very high quality
- High quality
- Inadequate quality

Those that are assessed as having “inadequate quality" will be reviewed within one year. After that the Swedish Higher Education Authority decides whether or not to revoke its entitlement to award a qualification. One of the targets is “to show the ability to search, collect, evaluate and critically interpret relevant information about a problem and to critically discuss phenomena, issues and situations”. At the school of Engineering, at the University of Borås, 8 of 14 programmes were "inadequate quality" last year.

Now it has started a process to raise the quality of education at the School of Education. A librarian from the library is part of the group that is working on this. The library has had low stature at the University, but now the importance of education for increased information literacy has been clarified.

The library at the University of Borås works with the Borås Model to increase the level of information literacy among the students. It is a model of how the library and the university departments can collaborate with information literacy. The model is a top-down-model and the Rector of the University of Borås has decided that it should be implemented in all programmes at the University.

The overall responsibility to promote and facilitate sustainable collaboration between the university departments and the library is shared by the heads of departments and the Library Director. Together with the directors of studies and heads of programmes, the librarian does overall planning at the programme level, to identify in which courses elements of information literacy development are most needed.

The focus will be on learning and understanding to help students develop an analytic and reflective attitude to information, to information sources and search results. The model is embedded in most programmes at the University today. In most cases there are three steps. Important information sources for the students' professional work is also included.

Keywords: *Information literacy, Sweden, higher education*

More than a citation manager: Zotero for scalable embedded librarianship and instruction assessment

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Extending the reach of instruction beyond the single class session is an ongoing effort in instruction librarianship. One solution has been embedding librarians in courses, but this approach is difficult to scale. First, libraries rarely have sufficient staff to embed librarians in numerous classes, particularly if using an in-person model which requires frequent class attendance. While online embedded librarianship is somewhat more sustainable, local cultural and technological barriers can make it difficult for librarians to participate fully in online course management systems. Moreover, not every class uses course management systems in a way that supports embedding. Repurposing the group library feature of the citation manager Zotero provides a sustainable solution to this dilemma while also providing a natural opportunity to teach an additional research skill to students. This presentation will report on best practices for using Zotero in this way and student responses from an upper-division undergraduate class.

The Zotero private group library feature allows invited users to share citations, notes, and documents with each other in group folders. By becoming a member of a group library for a class or small groups of students in a class, the librarian can quickly and easily view the resources students are working with. They can not only observe but also participate in the students' research process by making suggestions and asking questions via notes attached to citations and by adding documents to the group library. Thus, librarians can effectively extend their reach into the research process over the course of a semester. Moreover, because Zotero is open source and can be installed as a simple plugin or accessed via the web, it is easy to implement.

Not only is Zotero a useful tool for extending the reach of instruction sustainably, it further gives insights into student approaches to research that are otherwise unavailable to librarians. The librarian can see resources students are choosing as they are added to the collection and rapidly address any barriers and confusion as they arise. This is also an opportunity to assess and reflect on their instruction's effectiveness. For example, Zotero will record information about what database or provider an article was saved from, allowing a librarian to see what tools are most used by students and assess the impact of the library instruction sessions. The software will also record when an article was saved, giving a sense of when students are conducting their research.

Pecha-kucha attendees will learn how Zotero was applied as an embedding tool in an upper division research class on Environmental Justice in combination with two in-person class sessions. Attendees will learn how to apply Zotero's capabilities to assess information literacy instruction and student adoption of tools presented during the in-class instruction sessions. Finally, survey-based feedback from students on their perceptions of the tool's use in an actual class will be presented. Pecha-kucha attendees will leave understanding the strengths of Zotero group libraries for embedding and with basic tools to approach instructors at their institutions to set up a similar, sustainable program.

Keywords: citation management, embedded librarianship, assessment of instruction

Higher Education Provision of Accessible Information for Learning: Guidelines

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ICT literacy is the ability to use particular digital devices, software and infrastructure. ICT literacy is particularly vital to people with disabilities as they cannot access most e-content without the help of specific tools or software, and they must know what tools are available, and learn how to use them. This situation is particularly unfair to a population that is rarely found at higher education level worldwide even if we are at a time when the advent of ICTs was supposed to open up higher education to all.

Simultaneously, the higher education sector is currently looking for ways to expand access to higher education to all without discrimination. It also has to respond to a growing demand for higher education re-training, specialization or change of field needed by all to keep a pace with the rapid changes of today's knowledge societies and labor market. This means that higher education now finds itself providing learning to older students than before. Both have an impact on student numbers and since higher education budgets are, if not decreasing, stagnating in most countries, the solution used by most universities is to provide online courses that are unfortunately often accessible only through the use of add-on tools and specific software.

Is there a way to shift the burden of knowing how to use the specific tools (and often having to buy tools required for accessing learning material by people with disabilities) to the higher education sector so that a greater number of people with disabilities may access and succeed in higher education?

At first glance, this seems unrealistic and unfeasible: disabilities are many and of very different types; higher education e-content producers do not master the technology to develop accessible content; and the technology is rapidly evolving and, consequently, keeping track is difficult..

Aa project led by the European Agency for Inclusive and Special Needs Education, and in which the International Association of Universities (IAU) is a partner, is trying to prove that better access for people with disabilities is not only desirable but attainable. This is being achieved by drafting guidelines to help e-content producers to create accessible material for learning. Within the project, the IAU is in the process of testing the guidelines at the Association's level (website, database, and e-Bulletin) and at both an online and with a 'traditional' university (online course). The rationale behind IAU's partnership in the project as well as the preliminary results and recommendations for a way forward of the testing phase of the guidelines will be presented at the session.

IAU's belief is that if all producers of higher education e-content were to know how to easily produce accessible e-content, this would reduce the need for people with disabilities to be ICT literate, making them less technology-dependent. If all higher education e-content would be created in such a way that from the day of their development they would be readable and accessible to all, more people with disabilities might be given the opportunity to study and succeed at the higher education level.

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Keywords: *ICT literacy; e-content; accessibility; people with disabilities*

Use of Media Education in Lawyers Professional Training

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Modern scientists urge the necessity of developing media and information literacy in a knowledge society. This situation causes fundamentally new requirements for the training of specialists in different spheres and particularly in law. Rapid development of information and communication technologies and system media in the modern world urgently needs focused training and skilled individuals to use them safely. Certainly, this problem also concerns law higher education.

Although the role of the media in society becomes more powerful, modern law education in Ukraine is still not very active and does not take advantages of all of the potential benefits offered by the information society, including media-educational technologies. Despite the goals that lie in the thorough preparation of the new generation for an active life in the rapid development of information technological society, the question of mass media use is, in our opinion, not disclosed enough in the educational environment of law institutions of higher education.

Trends in the development of modern higher education in Ukraine are inseparably connected with the widespread introduction of the learning process and the various forms of active learning. Such changes in education require improvement of specialists' basic training. In high school, media education elements have to be included into the various specialties' curricula of professionally oriented humanitarian training in corresponding volumes.

Media literacy / media competence, which people gain during media education, is aided through active use of the opportunities that provide television informational space, media and the internet. It also assists in better understanding of media culture language. The training of such a person cannot take place only within the limits of traditional training. Being active consumers of information, means that media competency is certainly a necessary requirement for a specialist in the field of law.

Media education technologies become the means of understanding the purpose of media products, which make a significant impact on society. One of the directions of such influence is the ability to shape the legal culture of citizens and at the same time to monitor its level. Thus, in Ukraine active promotion of legal clinics and ensuring their interaction with mass media is recommended. This trend will be productive only so long as future professionals in the sphere of law achieve a high level of media culture.

In cooperation with the media as part of the university educational process, this interaction is also expected, as well as in future professional activities of lawyers, because another direction of future professionals in the field of law is to reform legislation regulating the media.

Based on the above-stated, it is possible to assert that the use of media education, the main goal of which is the development of personal critical thinking, media literacy, media competence, in the professional training of lawyers, should become a desired quality to improve future training of law professionals.

It should be noted that the theme of the use and role of media education technologies in training lawyers is still not developed enough, so there is a need for further theoretical and practical research, the creation of media-educational programs, projects, and methodological kits.

Keywords: *Media education technologies, media literacy, media competence, lawyers professional training*

Information Literacy in the conditions of intercultural communication

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Introduction to the issue

Every nation has its own idea about information literacy both within the native cultural space and concerning representatives of other culture. This paper is concerned with questions of information literacy within intercultural communication. The novelty of this research is that information literacy is considered in a cross-cultural context.

Objectives and tasks

The aim of the paper is to investigate the interaction of information literacy and intercultural communication. The paper highlights the following issues: the accurate interaction of two concepts, the special role of high information literacy in the conditions of intercultural communication; the influence of different levels of information literacy on intercultural interaction; and the reasons why low information literacy contributes to conflict in effective intercultural communication.

Discussion

A person, perceives information about the world according to representations, the relations and the values dominating in their native culture, and behaves according to them. Therefore the information literacy of a person depends in part upon the culture in which a person was born and brought up. To understand the information behavior of representatives of any culture one needs to know what is peculiar to this culture. First of all it is necessary to know how people perceive information, then how they see a situation, and how their information literacy works in their culture. The quality of effective intercultural communication is defined by interpretation of information behavior of representatives from different cultures. Skills of information literacy help to gain relevant knowledge about the way of life, customs, habits, traditions, culture, literature, and the politic situations, and this constitutes. The system of knowledge about each culture. Ability to estimate and apply this knowledge, make a basis of effective intercultural communication.

Outcomes of the contribution

A high level of information literacy of the representative belonging to any culture is an obligatory element of successful understanding of any inter-cultural event. Piles of information in a global network stream or lack of information about any culture leads to misunderstandings and even to intolerance. The more you receive qualitative information about a culture, the more adequately and tolerantly you can understand it and interact with it. The authors conducted a survey among senior course students in Kemerovo State University of Culture and Arts and showed that when students got information about any culture beforehand they were more tolerant, informed and excited about the country while asking questions. However if asked questions about countries for which they didn't get information beforehand, then, they less tolerant and engaged. Also in such cases students demonstrated a lower level of information literacy about the cultures. The reasons for this are poor information literacy and as a result ignorance and non-effective communication.

Conclusion and Proposal

In this situation there is a need for teaching the skills of information literacy to the younger generation so that they will be capable to form opinions, analyze events in the world (cultural, political), and make reasonable judgments not only within the native culture, but also at the level of intercultural communication. Lack of information literacy of the youth among different nations can lead to intolerance, disrespect and ignorance of other culture or nations. In these conditions it is necessary to organize updating and include in the curriculum the content, forms and methods of formation of information literacy, at a level adequate for modern social and pedagogical realities in relation to attitudes of intercultural communication. The major task of an educator in any institution is to find such mechanisms of training which would be directed toward formation of people's information literacy in order to be ready for intercultural dialogue.

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Keywords: *information literacy, intercultural communication, culture, information behavior, nation.*

Information literacy of students

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This paper presents the results of a study on the understanding of the term information literacy of primary and secondary school students, from the fifth grade of elementary school to the fourth year of high school at the local level, and who are members of the City Library in Imotski. The study examined 98 members of the City Library, through a questionnaire with a total of 25 questions. The selected sample consists of primary and secondary school students, members of the City Library.

The main objectives of our study were: to investigate, analyze and determine how many students are information literate. That is, if students at the age of eleven to eighteen years understand the concept of information literacy in the right way. According to Špiranec and Banek (2008), one of the most prominent definitions on IL comes from ALA which stated that information literate persons are defined as: those who have learned how to learn because they know how knowledge is organized, how to find information and how to use them in a completely understandable way. Many students, in fact, in the aforementioned age category confuse the concepts of information and computer literacy, thinking if they use a computer that they are automatically information literate. In doing so, they do not know the concepts such as Boolean operators and Google Scholar. Pupils' lack of understanding of the term information literacy leads them astray and even opens a new topic on the dangers of (un)awareness with which students often encounter on the Internet because of ignorance.

Since the misunderstanding of information literacy among students is present in the increased percentage, a measure is proposed of ongoing professional development of students in the spirit of the European concept of education. In this sense, in the local context of Imotski where our study was conducted, the ongoing information education in schools should be improved. An important determinant of new educational programs should be a forming of a council for education on the level of primary and secondary schools in Imotski that would take care of the ongoing education and training of students primarily, but also teachers and librarians - key holder of the educational system changes.

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Keywords: *information literacy, virtual reality, students.*

Beyond the one-shot IL class: maximizing access to research assistance at the point of need

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One-shot IL classes are the norm at the American University of Sharjah (AUS). However, the value of these classes may be evident within the brief follow-up encounters that often take place at the reference desk or other library service points. This is an opportune encounter, where teachable moments can reinforce recent introductions of critical IL skills, and can be a turning point in a student's academic career when seeking research assistance at their point of need.

Not always for a student is it clear where in the library he or she should go to for research assistance. At the AUS Library, three service desks are spread across an 11,000 square meter building to meet the library needs of the AUS academic community. The Circulation/Reserves Desk is situated on the ground floor in close proximity to the library entrance. Patron traffic at this desk is bustling as self-check stations are highly utilized and laptop checkouts are in high demand. Just a few steps away from the Circulation /Reserves Desk is the Information Commons (IC) Desk, a place where students can seek technical assistance for tasks such as printing and wifi configuration. Moving up one floor, sits the Research Help Desk. Students can seek research assistance at this desk with minimal effort as no appointment is required and face-to face contact with a librarian is available forty-six hours per week.

The AUS Librarians are confident that students who know to visit the Research Help Desk on the 1st floor are aware of the expert research assistance available to them. Concern remains for those unaware of the notion of a reference desk or who are uninformed about its whereabouts; this has prompted discussion about relocating The Research Help Desk as an effort provide research assistance effectually and efficiently.

Evident in the library literature is an abundance of examples where libraries have consolidated multiple services desks to create a one-stop service point. The AUS Library had entertained the idea of moving towards a one-desk service desk model for several years, but lacked a formal feasibility study that would support such a substantial decision. Although The AUS Library is not yet ten years old, it has seen various structural modifications to improve library services, but with little change to reference services. Currently, the library's footprint would not support such a change without significant physical structural changes and costs.

This Pecha Kucha presentation will highlight our current study that considers relocating The Research Help Desk from the 1st floor to the ground floor in order to be in close proximity to other service desks. It is posited that a customized, hybrid service model may be pivotal in supporting students' critical thinking skills that go beyond the one-shot IL session as it improves access to research assistance and meets students at their point of need.

Perceptions of Students on Information Literacy Intervention at two South African Universities

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Information literacy, the ability to find and use information in an ethical and legal manner, has been on the agenda of academic librarians for a very long time now. The driving force behind the information literacy agenda is the over-abundance of information particularly online. There is a general shift in the publications industry in which more and more information is now being published online and this has resulted in an influx of information available to users in general and students in particular. Librarians as custodians and facilitators of access to information of all kinds, have a role to play in ensuring that students acquire the necessary skills in order to properly handle information. The South African University System is usually classified into historically advantaged and historically disadvantaged. Students joining the historically advantaged institutions usually originate from the rich urban families while those attending the formerly disadvantaged institutions come from mostly rural schools without access or with limited access to libraries and technology.

The purpose of this study was to find out the perceptions of students on the information literacy intervention at Rhodes University, which is a formerly rich white institution and the University of Fort Hare, a formerly black and under-resourced university. In particular, respondents were asked to indicate if (1) information literacy was relevant to them and whether it made any contributions to their academic success and (2) whether there were any challenges associated with the content, delivery and assessment methods. Although the study was not comparative, the classification of the two universities assisted in casting some light on what students from across the classes of universities in South Africa thought about the concept of information literacy. The two universities used the same information literacy programme although the approach to delivery was different. The University of Fort Hare for example delivered the programme to all first years while Rhodes University tended to concentrate more on the extended programme which accommodated students who could hardly qualify to gain entry into the university.

The researcher believes that, while a lot has been written about information literacy, very little research has been conducted on the perceptions of students on the same, especially in South Africa. The study adopted a survey research methodology in which both questionnaires and semi-structured interviews were used to gather data about how students perceived information literacy in relation to its contribution to superior academic performance. The data gathered through questionnaires were quantitatively analysed while the data from the interviews were qualitatively analysed. The sample size for the study was 387 drawn from a combined student population of 14 393. The study adopted a non-proportional quota sampling technique to determine the number of respondents from both Rhodes University and the University of Fort Hare. The study adopted a non-proportional quota sampling technique which allowed the researchers to specify the minimum number of participants from the two universities. In addition, a sample of 10 Information Librarians was also selected for the study using purposive sampling technique. In addition, a sample of 10 Information Librarians was also in the study using purposive sampling technique. The study took a leaf from the ACRL (2000) information literacy standards among other models that were discussed. The findings of the study to a larger extent confirmed that information literacy had a positive impact on students' academic success, although some of the respondents were worried by the lack of a computer skills unit on the information literacy programme bemoaned the lack of a computer capacity building unit after the information literacy programme.

***Key Words**: Information literacy, academic performance, students, academic libraries, South Africa*

DiXL: Lifelong Learning Organisations and Libraries: A Joint Effort Towards Customers

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This PechaKucha will present The DiXL project as a work in progress. The Di-XL project objective is to develop an effective and sustainable Model for dissemination and utilization of lifelong learning projects (LLP) results via libraries. DiXL started on 1st November 2012 and it will end on 31st October 2014. Partners in the project are: National library of Latvia, Baltic Bright, Social innovation fund (Lithuania), Action Synergy (Greece Sedukon (Czech Republic), National Technical Library (Czech Republic), Belgrade City Library (Serbia). The first step was to carry out a Needs Analysis and Research (NAR) to identify the possibilities for dissemination and utilization through libraries. NAR revealed that lifelong learning organizations use libraries for dissemination of LLP results only randomly; they have not previously considered such possibilities. However, when questioned, they would welcome such cooperation and believe it would be successful. On the other hand, libraries are very experienced in working with different groups of users and in spreading information and knowledge and therefore they have a great potential for dissemination of LLP results. Libraries do consider themselves powerful potential partners for dissemination. They are able to clearly identify their role as part of the lifelong learning process. Libraries and lifelong learning organizations currently do not interact often, are not mutually familiar with each others' operations or missions, and are not specifically informed about what they can offer and how they might cooperate with one another. In order to enhance the cooperation of libraries and lifelong learning organizations in dissemination activities, concrete steps have been identified and should be used in developing an effective and sustainable model of dissemination and utilization. The specific aims of the Di-XL project are: 1) to identify barriers for insufficient cooperation between libraries and organizations active in LLP in dissemination and exploitation of results; 2) to propose a sustainable model of cooperation between libraries and organizations active in LLP projects for dissemination and exploitation of LLP results; the Model will include measures, mechanisms, arrangements, staff training proposals and material; 3) to introduce and test the Model in 5 partner countries - projects of Di-XL partners representing 4 thematic groups are used for testing: A. Gender equality and diversity, B. Intercultural and language training; C. Use of ICT in learning; D. Safety at work; 4) to improve the skills of library professionals for involvement in dissemination and exploitation of LLP projects and results; 5) to disseminate the proposed model throughout Europe: particularly in lifelong learning communities and stakeholders, and library communities and stakeholders. The Di-XL project addresses the following target groups: 1) organizations and individuals involved in LLP projects, or, more broadly, those involved in European cooperation in education and training; 2) libraries and library practitioners; 3) users of library services, visitors and customers of libraries, learners = potential users of the LLP project results (learners of all kinds and levels) = the reason for all work to be done by groups 1 and 2.

Keywords: *Lifelong learning, LLP organisations, libraries, dissemination, exploration, project results*

Elevating the Quality of Instructor Performance through Local Professional Development

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As in-demand information literacy instructors we rarely have time to discuss our teaching with colleagues. Regularly building in time for peer dialogue and professional development encourages continuous growth and a sense of rejuvenation. Regardless of the teaching environment, whether information literacy courses, one-time sessions, or online workshops, instructors will benefit from building a local community of practice. Learn how a small instruction team is able to continuously improve their teaching and hear their testimonials regarding the high impact on their everyday practice. During this session, attendees will be exposed to various strategies for continuous improvement. Some examples include guiding reflections on teaching practices, staging mock instruction sessions, encouraging low-risk peer observations, facilitating peer dialogue, incorporating student learning assessments, and exposing instructors to professional literature. As a result of attending this session, participants will be able to: (i) cultivate an environment of continuous professional growth in order to improve teaching practices, and (ii) build on existing expertise in order to nurture a spirit of innovation.

Keywords: professional development, professional growth, community of practice

Use of Social Media and Web 2.0 applications among Undergraduates: Exploring the readiness of Pakistani students

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Objective

In order to design information literacy instructions a unique study was conducted to explore readiness of undergraduate Pakistani students for use of social media and Web 2.0 applications for academic purposes. It is the first study of its kind in Pakistan.

Methods

A total of 427 undergraduate students from a public sector university participated in this study. Questionnaire based survey method was employed to collect the data from various disciplines including engineering, computer science, and social sciences. Non-probability based convenience sampling method was chosen to collect data. Students were checked for their perceptions and actual use for eight tools commonly used for Web 2.0 and social networking. They were also asked for the barriers if any, in using these tools and suggestions to overcome these barriers.

Results

The study found that undergraduate students are well-versed with Web 2.0 technologies. They use Face Book and Wikipedia most for information purposes. Neither gender nor program based differences were found among students in use of these advance technologies. Lack of awareness about these advanced technologies for academic purpose, ban on You Tube in Pakistan, and --- were identified as major obstacles in enhanced use.

Conclusion

Researchers hope that findings of this study will contribute towards the awareness among information literacy instruction designers in Pakistan. The extent of Web 2.0 and social networks use among students is promising for adoption of latest technology for information literacy instructions. Based on the findings designing of interactive information literacy instructions are suggested.

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Keywords: social media, web 2.0, undergraduates, Pakistan, survey

POSTERS

Talkin' 'Bout My Generation: Media Socialization and Intergenerational Information Literacy Initiatives

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Whether, how and what media a person uses depends on his or her media socialization. Media socialization is always a two-way process, as media users (especially children and adolescents) do not simply adapt to their environment but actively interact it and participate in its creation. Media socialization of young people is influenced by peers, educators, and the individual and social frameworks which create possibilities and impose restrictions on the use of media and their contents. The library is part of these frameworks and can contribute to their users' empowerment by offering activities that promote a media and information competent behaviour.

The experiences we make with media do not only have an individual quality but also a collective dimension as certain media experiences have an impact on a whole generation of media users. Media use and biography are interwoven in several ways: Some media experiences become part of our biography; media can support developmental tasks at different phases of our biography, and some media experiences may even contribute to the development of our identity. Different generations are largely influenced by characteristics of the media landscape they inherit and grow into in their formative years. However, we also know from empirical studies that individual media use changes over the life course.

For example, the media generations of so-called "Digital Natives" (born after the 1980s) and "Silver Surfers" (adults aged 55+ using the web on a frequent basis) grew up in quite different media landscapes. The media socialization of "Silver Surfers" was largely influenced by print media and television whereas digital natives have spent their entire lives surrounded by and using computers, videogames, digital music players, video cams, or mobile phones. "Digital Natives" are used to multitasking with digital media devices anytime and anywhere. "Silver Surfers" also use mobile devices but preferably access the web from their computers. As the generation now in middle age or approaching old age, they have had to adapt to changing technologies throughout their working lives as well as adapt to communicating with their children through digital devices. But despite different socialization experiences and media behaviour, both generations do have something in common: They both use and appreciate the web for socializing and communication purposes. While the social web helps "Digital Natives" with their identity management, "Silver Surfers" use the web to keep in touch with friends and relatives. This might be one starting point among several others for libraries to connect the competences and preferences of two different age groups in order to support intergenerational learning.

My poster summarizes research evidence and characteristics of these two media generations and highlights promising starting points for intergenerational information literacy initiatives.

Keywords: *Media socialization; media generations; digital natives, silver surfers; intergenerational information literacy initiatives*

Nation-wide Information Literacy e-Course for Secondary School Teachers and Students

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This poster introduces a unique model of information literacy e-course for teaching gymnasium teachers and students the information skills needed for doing research.

The new state curriculum establishes that the Estonian gymnasium students prepare a mandatory research paper and they must be able to find trustworthy information sources. The teachers feel that they lack sufficient knowledge and skills for supervising their students' work.

Presently, the problem is the overabundance of information; the skill of extracting the needed and trustworthy information from the global information pool is getting ever more vital. We might believe that the young people of today – the digital natives – are becoming increasingly information literate, but recent research shows that this is not true. They can find information, but lack the skills of evaluating and analysing their results (Van Deursen & Van Diepen, 2013). In order to participate in modern information society and lifelong learning, these skills must be acquired already in secondary school.

As a solution, the University of Tartu Library offers a nation-wide information literacy e-course for all teachers and students. The UT Library subject librarians, who are experienced in conducting information literacy e-courses for university students, developed an e-course for students, in cooperation with teachers of three partnering secondary schools.

First, a course was held for teachers. In the next course, these teachers then tutored their own students, who participated for the first time; in the same course, the subject librarians taught a new batch of teachers. The teachers and students study together and each time, some of the teachers become new tutors. The course was awarded a prize for popularising science; its participants come from all areas of the country.

The course is built upon the methods of active learning. The students read learning materials and practice information searching on their own subjects, describe their search process and analyse the results. Tutors give individual feedback on all exercises. Both the exercises and the feedback are posted on special forums where all participants can read them. Learning communities are supported where the participants can exchange ideas and learn from each other. At the end of the course, the participants reflect on their learning process and successes.

This poster introduces the model of the course and the analysis of the feedback from the participants, showing that such a course model, where the learners perform information searches on their own subjects and get individual feedback from information specialists serves to maintain active participation and interest of the learners. Active learning and formative assessment support deep learning; information search skills are acquired and practiced in practical work. The participants are more confident in their searches and more critical in selecting information sources.

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Keywords: *Information literacy course, secondary schools, e-learning*

Library for Practice: e-Informations on Demand

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The topic of this poster is the introduction of a new service in the Department of Social Work library. The poster describes that new service, reasons for offering it, and practical expectations. Formal higher and postgraduate education of Croatian social workers offered only at the Department of Social Work, Faculty of Law, University of Zagreb. The Department of Social Work is also the center for scientific research in the field of social work and social policy. The specialized library of the Department of Social Work is one of a kind in Croatia. Therefore, during as well as after their studies, social workers use it often. During contacts with social workers, especially those who have been in practice a long time, librarians are able to notice the specific information needs that are closely related to their daily work. But lots of social workers do not have the time and informational knowledge to track new developments in the field of their interest. Hence, the library is offering a new service called "Library for practice: e-informations on demand". This service offers targeted searching of e-sources to find the most recent and relevant information. It is designed as a support mechanism to professionals' practical work.The service model utilizes user email requests and librarians' responses. The response contains a list of relevant literature available in both paper and electronic formats. The number of e-sources depends on available copyrights. E-sources with open access are preferred. It is important to make this new library service visible to potential users. Therefore, information about it is placed on the library web pages, in the 'important news' column. As a good example of e-sources, links to selected resources in the field of social work are placed along with this notice. Some of them are selections of individual EU pages, e-journals and data bases to which the library has prepaid, and especially, e-sources with open access. To acquaint even more potentially interested users in this service, the information was forwarded to the Croatian professional association of social workers – „Hrvatska udruga socijalnih radnika". It is planned to introduce this new library service to other potentially interested groups as well: relevant higher education establishments and institutions as well as non-govermment associations. Collected answers will be posted on the website of the library in the form of FAQ (with the permission of the users). After some monitoring time, there will be assessment and the eventual correction of service accordingly.

***Keywords**: e-informations, social workers, library service*

Using Metacognition to Improve Information Literacy Skills

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Metacognition has been defined as thinking about thinking (Flavell, Miller, & Miller, 2002). The goal of this project is to gain insight into the extent that emphasizing metacognition during a series of information problem solving lessons and library research sessions improves student performance on a writing sample among high school sophomores in a required history class. It is hypothesized that increasing students' awareness of the stages of an information problem solving model could lead to improved results on a research based writing exercise. Student knowledge of and reflection on the stage of the information problem solving process they are engaged in might lead to higher quality research and thus better results on a writing sample as scored on a standardized rubric.

Objectives

Research Question: To what extent do students, who are in classes which receive lessons on specific information literacy skills taught by a school teacher/librarian, combined with regular reminders of the stages in the Big6 information problem solving process (Eisenberg & Berkowitz, 1990), improve performance when compared to students who do not receive these interventions?

Methodology

Seven classes (151 students) of high school World History were randomly assigned to a treatment or control group. The school's Teacher/Librarian received coaching on implementing the stages of the Big6 from the researchers. The treatment group classes received enhanced Information Literacy instruction from the school's Teacher/Librarian and daily reminders during class sessions of the stages of the Big6 information problem solving method. The teachers of the control groups used their normal method of instruction for a class research project. Additionally, treatment group students received daily exit tickets prompting them to identify which stage of the Big6 they had engaged with that day, and which stage they anticipated working on the next day. Students in all classes completed an essay based on their research. All essays were based on the same prompt from the state of Washington's Classroom Based Assessment for social studies. Essays were anonymized and randomized and scored by research assistants. The scorers used a standardized rubric (scale: 4 high to 1 low) from the state of Washington's social studies curriculum.

Outcomes

Outcomes of the analysis of the writing samples determined that the mean score of the control group was higher than that of the treatment group. The mean score for the treatment group was 2.5 while the mean score for the control group was 2.7. The difference between the mean scores of the two groups was not significant at the .05 level. Feedback from the students indicates the treatment classes were more aware of the information problem solving process, but this did not result in higher scores on the rubric. Although results did not indicate a significant positive impact of the intervention, the literature of Cognitive Psychology (Bransford, Brown, & Cocking, 2000) suggests a more focused intervention on the Big6 stage of Task Definition as a follow-up.

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Keywords: *Metacognition, Information Literacy, Information Problem Solving, Learning, Instruction*

Library Space and Business Information Literacy: Investment Lab at Li Ka Shing Library

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Singapore Management University (SMU) Libraries' Li Ka Shing Library is undergoing a library space revamp that is scheduled for completion by end-2014. This poster will present the rationale and plans for an investment lab and invite discussions of the potential impact of this space on business and financial information literacy.

Background and rationale

The library was designed in early 2000 according to specifications from the National Library Board's consultant. However, as the student population increased through the years, up to 4400 students come through the gates per day now. With the library being heavily used and students demanding more studying space, the current layout was found outdated and inefficient. One of the areas in the library space revamp plans is the investment lab. With "Finance and Financial Markets" as an Area of Excellence at SMU, the revamp is also opportunity for the library to create a dedicated space facilitating financial research. Group projects and collaboration are a major part of SMU's pedagogy. In the library, this is exemplified in how groups of three to six students gather around computer terminals with access to specialized business and financial databases. With a dedicated space, it is hoped that users would find collaboration easier. The lab can also function as an alternative space for faculty to hold small group consultations.

Implications for information literacy

Apart from fulfilling academic project requirements, learning to use multiple database platforms in the investment lab will also prepare students for the workplace, where different companies may have access to selected databases. Siam (2005) and Meth and Florence (2012) provide examples of how use of trading labs can be integrated into the curriculum, to bridge the gap between theory and "real world business" by experiential learning, as well as enhancing faculty-librarian collaboration. Library staff especially the team of Business research librarians may also use this as teaching space for small groups of students who require in-depth training in particular databases, such as new cohorts of PhD students.

Ideas and challenges

Alexander, Heck, & McElreath (2002) provide a good starting point for establishing an investment lab. For Li Ka Shing Library, software requirements include access to the major financial databases such as Bloomberg, Thomson Reuters and S&P. Due to the space constraints, the library will focus on encouraging collaboration. Thus in terms of hardware, plans have been drawn for collaboration tables with larger LCD screens for users to share their screens. While strategies for maximizing impact (Noguer, Budden, & Silva, 2011) will be taken into consideration, the challenge for Li Ka Shing Library's new investment lab will be managing demand which is expected to be high.

Invitation for discussion

Conference participants are invited to discuss their organisations' spaces for information literacy, and strategies for usage of such spaces. Other topics may include: how space and learning affect each other, and the information literacy strategies for business libraries.

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Keywords: *Business Research, Library Space, Academic Libraries, Financial Information*

Visualization of information literacy competences

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Modern universities have recognized learning outcomes as a starting point in the enhancement of the curriculum quality and the need to orientate outcomes towards social relevance and employability. The concepts 'learning outcomes' and 'competences' are sometimes used as substitute terms, but learning outcomes refer to learning achievements from the perspective of study programs, while competences refer to the capacities acquired through the learning process from the perspective of the student. In contrast to professional competences which are easy to define, primarily due to their connection to the scientific field and related profession, the generic and transferable competences are hard to define due to their un-specificity (in the domain sense) and multifunctionality which creates issues for the measurability of generic competencies.

Generic qualifications often have descriptors that define the learning outcomes associated with them and these are normally generic in nature and can be applied across subject disciplines and modes of learning. In higher education they are primarily used by course designers (developing learning outcomes and assessment criteria); those involved in quality assurance (validating, reviewing and approving programs of learning); and by credential evaluators (nationally and internationally, as reference points to help make accurate recognition judgments) (A Framework for Qualifications of the European Higher Education Area, 2005). The term 'generic' conveys the inherent nature of the competence. They are not specific to either the education sector or to a particular discipline. The alternative term 'transferable' is more a characteristic of generic competences and therefore the term generic information competences will be used later in the text.

Some of the work in developing of taxonomy of competences has been done in European projects: the European Dictionary of Skills and Competences (DISCO, 2012) and the European Skills/Competences, qualifications and Occupations (ESCO) which presents a base for the generic and subject specific competences at the European level.

However, until we develop a clear set of assessment criteria the generic competences will not be given the required attention during both curriculum development and the teaching process. Therefore, building a detailed ontology of both competences and learning outcomes could serve as a viable solution to the need for explicit assessment of generic skills. A discipline-embedded approach to developing generic skills is favored, with explicit assessment and reporting of the outcomes.

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Keywords: *visualization, generic competences, information literacy, ontology*

IL to go please! Moblie Information Literacy in the Arabian Gulf

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The proposed poster will address changes in the information and reference services, library instruction and methods for integrating digital literacy and transliteracy used in the context of Arabian Gulf students. Critical and digital media literacies go beyond text-based sources and extend to all forms of media that this Millennial Generation of incoming freshmen engineering students interacts with on a daily basis. Although these "digital natives" rely heavily on these digital and social media outlets to satisfy their information needs, most are alarmingly deficient in their evaluation of digital and social networking newsfeed sources. This poster will explain how librarians at the Petroleum Institute are using new emerging technologies to improve teaching and learning at the institute. More precisely it will discuss new initiatives such as "LibAnswers", Socrative in IL classes, rowing reference initiative, online QR code library tour guide and overall redesign the library as a central campus learning space that promotes active and collaborative learning. This poster will also provide results of the state of mobile learning survey in the UAE, and "flipped classroom" teaching methods for information literacy instruction, which switches traditional lecture activity to a more active learning that better suits students' learning styleS.

Keywords: *information and reference services, library instruction, mobile learning, Arabian Gulf*

Digital Citizenship: Global Perspectives Across Age Levels

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The demands on information literacy education have changed over the last decade as individuals of all ages around the world have access to information in networked society. One key change is the need for digital citizenship to be understood both for personal life and life-long learning. Whilst there are still differences in the extent to which people can access digital information (depending on economic, social and political conditions) there is no doubt that more people are having to use technology to exercise their rights as citizens, and are choosing to use technology to fulfill their personal lives. Librarians can promote digital citizenship in all formats (physical or virtual) through formal instruction face-to-face, or utilizing online tools. From pre-school through adulthood, digital citizenship and information literacy skills empower learners to be responsible citizens in global digital participatory culture.

Digital citizenship, which is part of information literacy, includes research skills, cyber-safety, online privacy, digital footprints, critical engagement with citizenship information, and ethical online behavior. The American Library Association AASL Standards for the 21st Century Learner shares skills, dispositions in action, responsibilities, and self-assessment strategies for developing information literacy and digital citizenship for youth today (ALA, 2007). Ideally, exposure to the rights and responsibilities of digital citizenship begins early in life and leads to informed decisions, citizen activism, and relevant life-long learning.

This poster defines Digital Citizenship, indicates its relationship with information literacy, and shares examples of embedding digital citizenship for young students and older adults on a global scale. Using the ALA Standards for the 21st Century Learner, SCONUL 7 Pillars of Information Literacy Core Model and best practices for teaching digital citizenship, the authors examined common elements and skills necessary for information literacy in digital culture. A collaboration across continents highlights similarities in information literacy needs and digital citizenship elements in a changing information climate. The first author will contribute insights from innovative projects in a school library (Hill, 2013; 2014) where children use new media to learn, and reflect on, digital citizenship. The second author will identify the continuing need to develop digital citizenship in adults, supporting their more complex rights and responsibilities as mature citizens. She will do this by spotlighting some example roles: as parent, carer and activist. The final element on the poster captures elements of digital citizenship in the virtual world (Second Life) in which the two authors met.

Keywords: *Digital citizenship, 21st century learning, information literacy, global collaboration*

Electronic Databases with Arabic language content: An evaluative study of using three academic databases in United Arab Emirates academic libraries

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Arabic is the native language of 99 percent of students in most institutions of higher learning in the UAE. The medium of instruction in these institutions is English for most courses and Arabic for courses in Arabic Studies. Databases available for researchers and students' academic and research needs are mostly in English language; and students have been using these resources to address their project requirements in all assignments until recently when databases with Arabic content were introduced. Despite such additions in library collections, students have expressed the deficiency they experience when using databases with Arabic content. This is not a new phenomenon as indicated in the literature. Various authors have commented on the scarcity of e-resources including databases with content in Arabic language (Fahmy & Rifaat, 2010; Khazandar, 2012 cited in *BBC Monitoring Middle East*). Reference Desk transactions have recorded an increased demand for information sources in Arabic language by students. This has led us to study how students use the available databases with Arabic content. The questions are:

1. Do databases really lack the information? Or
2. Is this because students lack IL skills in using Arabic content resources? Or
3. Are there other reasons?

The researchers believe that students need to be introduced to Arabic language resources as is done in English Language so that they can develop the vocabulary and strategies needed to identify keywords, brainstorm for alternative words and search techniques. This poster describes an evaluative study conducted in the United Arab Emirates to find out factors affecting use of and the extent of use of Arabic databases, user satisfaction of the information available and ease of access, and finally barriers experienced if any.

The study employed a web based survey methodology to collect data; questionnaires were distributed using Google survey. The sample of the study was purposeful, selecting 3 databases including AskZad, AlManhal and E-Marefa. These databases were selected because they are commonly used in academic and research libraries in the United Arab Emirates. The population of the study included undergraduate and graduate students, faculty and professionals in libraries who have experience in using the databases. A total of 100 usable responses from a total of 217 surveyed were analyzed using SPSS. This study will provide a better understanding of the determinants of user acceptance of databases which will assist librarians in acquiring usable databases. In addition library instructors will learn areas that need emphasis so that they can concentrate on them during Information Literacy sessions to ensure better use of these resources.

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Keywords: *Arabic language databases, e-resources, United Arab Emirates, University, AskZad, Almanhal E Marefa*

Information literacy and the Role of School Libraries in Educational System in the Republic of Croatia

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School libraries provide the foundation for learning and self-study, provided staff respect the student's personality. They can also affect how one will develop and how he/she will influence their social environment in regard to lifelong learning and his/her relationship to knowledge.

In the first place, access to sources of knowledge can encourage students to consider different ideas in the process of experiential learning and enable them to gain creative experience in the use and creation of information. These are the prerequisites for successful achievements in learning and understanding, stimulating the imagination and enjoyment in reading, promoting the principle that intellectual freedom and access to information are the starting points for successful and responsible participation in civil democratic society.

To achieve those goals, a collaborative effort of students, teachers, administrators and parents is required. In order to determine the level of information literacy required to support these outcomes, research was conducted in primary schools, high schools and at the university. The objective of the research was to acquire indicators of student familiarity with information literacy. The aim of this research was to determine the level of IT literacy not based exclusively on data search and detection but also on utility process as well as evaluation and critical assessment of data sources, whether printed or digital, in primary, high-school and university students by using a questionnaire**.**

The main tasks of the contemporary school including the school library are to encourage the need for written sources and other types of materials, to develop reading skills and habits, together with the basics of information literacy and information skills. By stressing the basic tasks of the school library, the student *becomes* an active participant in the new Croatian school. According to our National curriculum framework for pre-school and general compulsory and secondary education (2010, pp. 26.), the new Croatian school focuses on students' competencies: "students will be trained to recognize and collect information for specific situations, to evaluate the appropriateness and reliability of various information sources, to present information in a comprehensible, logical and concise manner, and to use information and communication technology for the following purposes, namely

i) to learn about the application of information and communication technology in society and their consequences, and
ii) to develop a critical attitude about the issues related to information validity and reliability and about legal and ethical principles of interactive ICT use."

All of this will enable students to become aware of their information and readers' needs that will help them to actively focus on competencies students use to participate in the knowledge society.

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Keywords: *school libraries, information literacy, electronic materials, research, contemporary school*

The Transformational Ambition of University Libraries and Student Experience Through Information Literacy

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Contextualized by individual experience (Dewey, 1938), the aim of this article is to describe the transformational ambition of university library actions concerning students (Allan, 2010). To do so, an in-depth reflection on the concept of educational experience is conducted using narrative research (Clandinin & Connelly, 2000). University space, subjective experience and sociality in university libraries create a conceptual framework using different kinds of texts and analyses. The aim is to show how information literacy can be used to contribute to the academic development of university students, highlighting the theoretical understandings proposed by Bruce (1997; 2003; 2004). Information skills, considered transversal, contribute decisively to what is expected of the individual after graduation, putting them to use in a labor context, also in transformation (Weaver, 2008). In this sense we can expect librarians' collaboration, training students in the information literacy context, using "real life" situations concerning the need for information, to enable in-depth learning. Learning takes place in a university campus, within which academic libraries are part of a possible response to the challenges posed by teachers and counselors. The challenged students seek solutions through multiple means available, such as seminars, conferences, conversations, associations, cultural activities, study visits and libraries. This open dialogue provides that growth, in knowledge, power, information, responsibility and reflective learning. It is also why the role of the academic library implies its positioning on an answering-asking axis, as a result of the challenges proposed by academics. The training in the library aims to respond and contribute importantly to these learning processes, resulting in a transformation in the students' transversal skills (Ivanic, 1998). Experience is a key factor for academic skills and particularly for information literacy. This assumption is stated not only in the content of the *curricula* programs to be taught but also through this other type of skill – information literacy - that is needed to develop the individual route.

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Keywords: *Information literacy, academic libraries, undergraduate students, experiential learning, educational experience*

Information Literacy of Second Year Undergraduate Medical Students in Brazil

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Introduction

The Brazilian Ministry of Education has been pushing medical schools nationwide to undertake curriculum reforms. Among other measures, the Faculty of Medicine welcomed our Information Literacy (IL) course beginning in 2013 as a fully developed module within the Medical Informatics discipline. The objective of this work is to know IL levels of medical undergraduates as a strategy in order to better design IL courses for this clientele. This study builds on previous IL surveys (Vincent et al., 2013; Vincent et al. 2013). We will present preliminary findings of an ongoing IL research.

Population and Methods

The Universidade do Estado do Rio de Janeiro (UERJ) is a public university situated in an urban area of Rio de Janeiro, Brazil. Hosted on the Faculty of Medicine´s premises, the library holds printed materials and computers with Internet access to electronic collections. Besides medical students, the library welcomes allied health students, faculty and professionals working at the neighboring university hospital. In this study, the research design is cross-sectional and the data-collection window was open from March to May 2014. At the beginning of the school year, 95 second-year undergraduate medical students received an e-mail. They were asked to register into our online education platform (MOODLE) and take part in an electronic survey. Attached to the email, there was a document describing the login procedure in a stepwise manner. The IL questionnaire was designed as an electronic template with a built-in database hosted at the local web server. Descriptive analysis will address participants´ demographic and IL elements.

Results and Discussion

Until now, 58 (61%) of the 95 second-year undergraduate medical students registered into MOODLE and answered the online survey. Regarding the 58 participants, 57% were women. Only 32 informed their age. Age range was 18-25, median age was 21 and mean age was 21.06 (SD=1.81). Fifty-one (88%) reported having Internet access from home. Forty-seven (81%) reported referring to library/librarians as resources when seeking scientific and technical information. One received training from librarians. Forty (69%) search the literature on their own. Twenty-two (40%) referred to have difficulties in choosing adequate search words, and none reported the use of search terms derived from Decs (Lilacs) or MeSH (Medline) vocabularies. Although the survey is still ongoing, the participants so far showed low IL. This is the first IL survey ever run at UERJ and we hope this study may improve forthcoming IL courses. Well-trained second year students may spread IL awareness among peers, faculty, and the adjunct hospital community. We believe that successful IL teaching initiatives for undergraduate medical students are strategic in developing an IL culture in our institution.

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Keywords: *Information literacy, medicine, undergraduate student, cross-sectional*

Improving Environmental Health Literacy: the Cross-disciplinary Approach within the Italian Asbestos Project

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Background

Information literacy requires a cross-disciplinary approach at both transnational and local level (WHO, 2012a; Sørensen et al., 2012) and this is particularly evident in the field of global environmental health. The Asbestos case exemplifies a critical environmental health issue requiring a cross-disciplinary approach (ILO-WHO, 2007; Park et al, 2012) which relies upon the *Environment and Health* integrated approach (EEA, 2013; WHO, 2012b).

Objectives

This paper reports on the environmental health literacy activities performed within the ongoing Italian national research project *Asbestos*, funded by the Ministry of Health and coordinated by the *Istituto Superiore di Sanità* (www.iss.it/amianto). We discuss the innovation of including information literacy in the project together with the impact on training and dissemination activities performed in different countries and targeted to different stakeholders.

Methodology

The *Asbestos* research project includes training and dissemination activity. The methodology is based on the NECOBELAC FP7 project and associated initiatives. Environmental health literacy (EHL) is implemented in those countries where asbestos mining or use is still permitted or recently banned. The EHL activities consist of: (*i*) conferences and seminars attended by health professionals and researchers, social scientists and decision-makers, workers; (*ii*) dissemination of multi-lingual technical-scientific reports, information on available scientific sources and normative documentation; (*iii*) training for improving open access publication on asbestos; and (*iv*) on-line diffusion of tutorials in local languages.

Outcomes

The *Asbestos* research project performed training and dissemination activities in Latin American countries. Free multimedia and multi-lingual (Italian, Spanish and English) dissemination material including articles, reports, videos, power point presentations was published and is available on the project website. The activities were dedicated to improving knowledge and awareness on occupational and environmental hazardous exposures and the prevention of asbestos-related diseases, as well as on the global and local burden of such diseases. Health information literacy was shown to have increased critical thinking on asbestos hazardous exposures and related diseases, as well as the access, use and re-use of quality scientific information among different stakeholders, particularly university students including doctoral students, and on policy makers.

Conclusions

The asbestos case testifies to the links between public health, environment and socio-economic development. It confirms the need to address environmental health literacy through a cross-disciplinary approach. The Italian experience on asbestos. contributes to fostering the prevention of asbestos-related diseases in other countries and facilitates informed and appropriate decisions to support proactive approaches to healthy living and for environmental practice.

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Keywords*: environmental health literacy, information literacy, cross-disciplinary approach, asbestos, international cooperation*

Assess this! Assessment methods in information for an academic literacy course for engineering student at the graduate level

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This poster presents an overview of assessment methods of information and academic literacy in the stand-alone credit course Research, Publications and Responsibility in Science mainly conducted by librarians at the first year of graduate study at University of Zagreb, Faculty of Electrical Engineering and Computing. The assessment methods in the course rely on traditional assessment namely multiple choice and short answers. In evaluating practical, theoretical and professional skills, the implementation of the approach of authentic assessment can be used, which is based on the simulation of the publishing process of a scientific paper and is accompanied by a covering letter to the editor (via Open Journal System) using the open-source learning platform Moodle.

The main purpose of this study, besides the overview of the assessment methods, is to show the advantages and disadvantages of various assessment methods. The evaluation data was collected through the grading points of each of five assessments during the period of the summer semester of Academic Year 2012/2013 on a sample of 260 evaluated students' enrolled in the course.

The results of the assessments showed that the students are overall very good in all examination aspects, but that there is a significant number of non-accession to practical tests, which require more work, such as the simulation of the publishing process for a scientific paper.

Keywords: *Higher education, assessment methods, authentic assessments, information literacy, engineering students, computing students, Open Journal System, Moodle*

Survey Results of Post Graduate and Post Doctorate Information Literacy Skills Assessment at King Abdullah University of Science and Technology

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King Abdullah University of Science and Technology (KAUST) is a new graduate level only university in Saudi Arabia. KAUST is a research focused university both in its Academic Divisions and its Research Centers, as well as collaborative partnerships with outside research centers and institutions. Opening in 2009, with a multinational faculty and student body (69+ nationalities) it provides an excellent opportunity to look at postgraduate and postdoctoral Information Literacy (IL) skills from around the world. While there is much written about undergraduate IL skills, there is less written about post graduate and postdoctorate IL skills. Streatfield, Allen and Wilson (2010), reporting on a national survey done in the UK on postgraduate and postdoctorate researchers, state "Generally, there appeared to be an inherent assumption that most people who had reached the postgraduate student level and beyond would have few issues, concerns and needs for training in relation to the information they required for their research."

This poster will look at the results of a survey that will be administered during Spring 2014. The KAUST survey is patterned after the DeSales University Information Literacy Assessment Survey. The survey has two parts. Part 1 has demographic information such as age, nationality, native language, most recent degree granting country, etc. Part 2 has 14 assessment questions. The survey assesses information literacy skills such as discerning the major theme in a brief article; Boolean operator use and truncation skills; plagiarism identification, etc. This assessment will be the first step in identifying what IL skills our researchers have when they arrive here. Using the assessment results will aid in determining whether additional instruction is needed and which areas. We will be able to tailor future IL trainings and/or programs to improve/increase their skills.

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Keywords: *Postgraduate IL, postdoctoral IL, IL assessment*

The Information Literacy Concept Captured from Studies Performed in the Health Sciences

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Introduction

The meaning of Information Literacy (IL) has evolved since its birth in the 1970´s. Kovárová and Zadrazilova (2013) pointed out the inadequacy of the accepted definition vis-à-vis the changes we have been through due to information technologies. According to them, "all concepts related to literacy involve opportunities and problems that are associated with improvement in information technologies". Central in the Information Science field, IL may be seen as a methodological tool by the medical and allied health sciences. We therefore suspect that these researchers may be unaware of the IL concept. In fact, only in 2011 IL became a descriptor for MEDLINE, the National Library of Medicine database indexing biology and health sciences literature (Alpi, 2005). Our objective is to reveal implicit aspects of IL captured from studies in the health sciences.

Methods

We conducted a bibliographic search on MEDLINE (http://www.pubmed.gov) using the keywords "internet literacy", "literature retrieval", "lilacs", "medline", "pubmed", "Information Storage and Retrieval", "Students", "Public Health" e "Questionnaires" from 1998 to 2010. Studies that met the inclusion criteria (Jacobs, Rosenfeld, Haber, 2003) were analyzed and summarized according to authorship, country, population, objectives, study design, data collection methods, questionnaire items (QI) and core concepts (CC).

Results and Discussion

From 118 studies identified, 26 were selected. Studies that seemed to investigate aspects more tied to the concept of IL had librarians as authors or collaborators. Studies were conducted in 15 countries, and the USA contributed with 9 studies. Subjects were mostly undergraduate medicine students. Studies were mostly cross-sectional using self-applied questionnaires. QI investigated knowledge, skills and attitudes in the use of online reference databases (Medline, Cinahl, PsycINFO, Cochrane Library), electronic journals, web pages, among other resources within the health sciences. Regarding CC, four studies used the terms IL and IL skills. A variety of terms were identified: Information superhighway, Computer literacy, *Educação via Internet*, Information Retrieval System, Library Skills, Information Technology, Computer Literacy, Computer Skills, Computer Use, Information Seeking Skills, Competence in Nursing Informatics, Health Information Literacy, *Impact Professionel D´Internet*. Although 22 studies did not mention the IL concept explicitly, the items featured in the questionnaires contained the elements that characterize IL. Regarding the fact that the IL concept was coined by Paul Zurkowski, an American librarian, it is not surprising that its use would be found in studies performed in the USA and Australia, both English-speaking countries that may have had an earlier contact with IL concept. The bibliographic search window defined a period starting after the National Library of Medicine (NLM) launched online access to MEDLINE and prior to the year when IL figured as a MEDLINE´s Medical Subject Heading (MeSH). Since MEDLINE indexes the health science literature, we believe that the authors chose not to use it or maybe were not aware of the concept. The incorporation of IL in MEDLINE´s MeSH database indicates that IL has been assimilated by the biology and health sciences.

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Keywords: Information literacy, questionnaires, health

WORKSHOPS

Improve Your Instruction with Classroom Assessment Techniques

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Topics to be Covered

This workshop will provide hands-on tools for assessing classroom teaching.

Academic librarians are increasingly required to demonstrate evidence of their impact on student academic achievement and success. Measuring impact allows us to prioritize and create sustainable programs that truly make a difference to our students. The assessment tools discussed in this workshop will provide a way for instruction librarians to define and measure information literacy learning outcomes. These tools can give teaching librarians almost immediate feedback about student learning.

Assessing student learning in the library also leads to improvements in library instruction techniques and instructional design. The collection of assessment tools we will share can be adapted to different learning environments and academic settings, including traditional one-shot library instruction, online instruction, and for-credit courses. The techniques presented are low-tech, and engage students primarily by asking them to think and write.

Objectives

The presentation will define classroom assessment and explain the need for classroom assessment in the library. It will emphasize starting with learning outcomes in mind and using classroom assessment techniques to measure those outcomes. We will also address the assessment cycle and the need to make use of information gained through classroom assessment in order to improve student learning. Classroom assessment techniques allow librarians to shorten the timeline of the assessment cycle by reducing the time between finding out what students know and adjusting a lesson plan accordingly -- sometimes informed changes can even be made during an instruction session.

This workshop will be active. Attendees will participate in several classroom assessment techniques in the session, including a self-confidence survey, a goal ranking-and-matching exercise, and a transfer and apply exercise. The take-home packet that participants will use in the session will include several examples of library-specific tools for classroom assessment. The presentation will follow a workshop model, where pieces of information are presented and then understanding is checked via classroom assessment technique.

Outcomes

Librarians who attend this workshop will leave with ready-to-go assessment tools that will help them assess the impact of their instruction, as well as an understanding of the rationale and best practices for classroom assessment. The workshop and handouts will give librarians a practical, hands-on start to conducting meaningful assessment of student learning.

Audience

Instruction librarians, including those who offer one-shot instruction sessions, those embedded in courses as librarians, those who teach online, and those who teach for-credit courses.

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Keywords: *Information literacy, classroom assessment techniques, instruction, assessment*

Getting published: tips for aspiring authors

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Are you keen to develop your research or workplace investigations into a paper published in a peer-reviewed journal? This workshop, led by members of the editorial team of the Journal of Information Literacy will provide an opportunity to pick up tips for getting published. We will offer an insider view of the peer review process and highlight common problems that our editorial team encounter when papers are submitted. This will be a practical workshop with a chance to see the reviewers' criteria for evaluating papers and discuss your ideas for publication with the team. The session is aimed at budding authors who are considering submitting their first paper to a peer-reviewed journal. It may be particularly suitable for doctoral students, but the session will also be of interest to those who are not authors, but who support and advise research students.

During the workshop you will discuss how to adapt a conference presentation or short report into a peer-reviewed journal article. We will also consider how to get started with the writing process and offer advice from the literature and from our own experience.

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Learning Environment for Ethical Information Literacy

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Topics

Ethics helps us to differentiate between acceptable and non-acceptable behavior in a society. Ethical principles are stressed in several policies and documents through the world. Most of them include the fundamental rights of human dignity, autonomy, protection, safety, maximization of benefits and minimization of harms. Teaching information literacy is one of the important tasks of librarians. They should create such a learning environment which could help to identify ethical dimensions of information literacy process. The competence of identifying a needed information, locate, evaluate and effectively use it is one of the most important competences, especially in a perspective of lifelong learning. Digital, visual, textual and technological skills are crucial for supporting information literacy and should be developed in a context of information literacy. Avoiding plagiarism, information and data protection, citing sources, including references, using primary and secondary sources and implementing scholar and popular communications are the main themes which should be pointed out in courses of information literacy.

Objectives

The idea is not just to mention and explain them, but to establish their relationship to ethical principles of dignity, protection, integrity and respect which should be a motive for students. Learning environments should support an exchange of ideas, sharing experiences and developing critical views to ethical aspects. Ethical principles for maximization of benefits and minimization of harms could be widely spread in a teaching process to identify, locate, evaluate in effectively use information. A problem solving learning environment should be created to promote the ethical dimension of information literacy. The theme would be introduced in a workshop defining where the constructive and supporting learning environment will be established with the aim of sharing experiences, exchanging ideas, expressing critical thinking and solving real problems with ethical dimensions of information literacy.

Outcomes

Participants should strengthen their awareness of ethical principles in an information literacy context. Several ideas and different experiences of participants would be helpful when implementing ethical dimensions of information literacy in their practice. Participants should develop critical thinking and apply this competence in a learning environment.

Target Audience

Librarians, other professionals and students are welcome to active participate in the workshop.

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Keywords*: Ethics, information literacy, learning environment, problem solving, workshop*

Developing and Using Information Literacy Measurement Tools

Ralph Catts

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In this workshop participants will work with the UNESCO MIL competency standards to check on the content validity of examples of indicators of MIL and then discuss the role of MIL Indicators in the evaluation of IL programme initiatives in higher education. This will be practical hands on workshop. Participants should bring a laptop or tablet on which they can enter information and save and transmit data via the internet.

The outcomes for participants will include:

- An increased understanding of the MIL competency standards;
- Skill in ensuring the content validation of indicators of (M) IL
- A model for effectively and efficiently demonstrating any effects of (M) IL programmes for students (or faculty) in Higher education.

PANELS

Relating Research and Practice in Information Literacy

Chair

Sheila Webber

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Panelists

Bill Johnston

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Introduction

Discussion about research in Information Literacy (IL) is a complex intellectual process given significant differences in research approach (for example positivist versus interpretivist) and considerable differences in the sponsorship, purpose, scale and design of particular projects. Practice is an equally complex field for debate, entailing different kinds of library, formal and informal learning environments and other contexts such as workplaces. ECIL 2014 already offers an international space to share research/practice connections through the medium of the presentations and opportunities for networking. This panel will provide an opportunity within ECIL to engage in a focused discussion of the connections between research and practice in IL.

Objectives of the Panel Session

The objectives are to identify tensions and connections between IL research and practice, and to provide ECIL delegates with the opportunity to debate these issues. The panelists are all active researchers, who have also been practitioners earlier in their careers. The panelists will each present a paper, and then join with the audience in debating arising questions.

Panelists and Panel Structure

Paper 1: The Varied Agenda for Information Literacy Research (Sheila Webber)

An examination of documents which propose research agenda reveal differing perspectives and priorities. For example, surveys and comments from practitioners (Webber, 2007; Webber, 2014) show that they prioritise research that demonstrates the impact of IL. However, researcher statements place more emphasis on understanding the nature of IL in different contexts and settings, and the differing norms and values that frame IL practices (e.g. Lloyd and Bruce, 2011; Limberg, 2010) as well as considering issues of research approach. Research agenda are also affected, for example, by national educational systems (e.g. ACRL, 2011) and research funding (e.g. Lloyd and Bruce, 2011), and by international policy (e.g. UNESCO's focus on measuring IL). Webber will highlight similarities and differences that emerge, and suggests that people's context, worldview and motives will be influential in defining their view of IL research priorities.

Paper 2: Scrutinizing the Discourse of the Research-Practice Gap (Louise Limberg)

Limberg will draw on a recent literature review on the relationship between research and practice in LIS to question the nature of the stated gap between research and practice and discuss ideas for in-depth empirical research on the relationship between IL research and practice. Empirical examples of evidence that counter the taken for granted statements of a research-practice gap will be provided and ways of reshaping the relationship between IL research and professional practice will be proposed. The role of theoretical perspectives for the relevance of IL research to practice will be touched upon.

Paper 3: Connections Between Research and Practice in the IL Narrative: A Mapping of the Literature (Ola Pilerot)

Insufficient communication of research findings is identified as a reason for the lack of connection between research and practice (e.g. Haddow & Klobas, 2004; McKechnie, Julien, & Oliphant, 2008). However, since the IL literature to a great extent consists of contributions from practitioners (e.g. Sundin, 2008) it is of interest to address the issue of how various stakeholders within the field are communicating with each other. In his presentation, Pilerot will draw on a previous study (Pilerot & Lindberg, 2011) in order to present a conceptualisation of the IL literature as including three main strands with their respective stakeholders and interests. An indicative mapping of connections between the three strands will be presented and discussed.

Paper 4: Capacity Building for Conducting and Using Research: What Can We Learn from Experience in Higher and Lifelong Learning? (Bill Johnston)

Bill will explore how researchers and practitioners engage in dialogue and collaborate to build capacity. To stimulate discussion, Bill will draw on:

(i) several decades of experience in applying educational research to curriculum development, course redesign and postgraduate training for university lecturers;

(ii) involvement with a recent European project (DIALOGUE http://dialogue.eucen.eu/) aimed at bridging the gap between academic research and University Lifelong Learning;

Questions for Discussion Amongst Panelists and Participants will Include:

How should IL research priorities be decided, and who should decide them? How can researchers and practitioners engage in dialogue and collaborate to build capacity in IL research? What are the roles of national/trans-national institutions and policies in IL research? What is the relationship between IL research and professional practice? and other questions arising from the panel will be addressed.

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Keywords: *Information literacy, research, practice, policy*

Transferability of information and data literacy beyond higher education

Ralph Catts

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Background:

Information and data literacy (IDL) is critical in university settings. Ability to handle and manage information and data is also important as a transferable set of skills, competencies and capabilities, as well as know-how, beyond higher education; particularly so in a knowledge-based economy, where the gathering, interpreting and deployment of evidence are crucial components. The inclusion of data literacy is particularly relevant in a context where huge and ever-increasing volumes of data are being produced across all academic disciplines, and there are indispensable skills associated with the effective creation, management, dissemination and curation of data.

The Research Information and Digital Literacies Coalition (RIDLs)[5], a publicly-funded, UK-based network of organisations and individuals interested in promoting IDL, is devoting part of its 2014 programme to a consideration of the relevance of IDL for individuals emerging from higher education into the wider world of employment.

This activity, between March and July 2014, focused in particular on the perceptions that a range of key players have of IDL, and the extent to which IDL-related issues are recognised and addressed by them in their approach to training and skills. The relevant parties include:

- university careers advisory services;
- doctoral training centres/partnerships;
- learned and professional bodies;
- accreditation organisations;
- specialist bodies at the boundary between universities and employment, e.g. National Centre for Universities Business, UK Commission for Employment and Skills;
- organisations representing business / industry;
- trade unions.

RIDLs also considered the relevance of IDL to public policy developments in the UK relating to areas such as employability and lifelong learning.

RIDLs therefore consulted with organisations to develop an understanding of the place (if any) of IDL in their policy, strategy and practice. In this process, care was taken to explain the concept of IDL, as this is often not well-recognised as a descriptive term. This consultation yielded evidence to provide an idea of whether/how IDL is considered as a transferable set of attributes; and whether there is scope for fostering a better understanding of the relevance and importance of IDL among relevant bodies that have not previously identified with this issue.

[5] http://www.researchinfonet.org/infolit/ridls

Issues for Panel discussion

ECIL2014 is taking place after the end of the consultation, and will therefore provide a timely opportunity to reflect on the findings, published on the web pages referenced above, and their applicability in different national settings. Building on these findings, ECIL delegates will be able to:

- consider the merits and/or usefulness of entering into a dialogue with stakeholders at the juncture between higher education and employment;
- learn from the experience of generating interest in IDL among diverse stakeholders in the UK;
- provide their own perspectives on these issues, drawn from their national experiences;
- consider how the concept of IDL might be explained in a language that relates to the needs and priorities of these stakeholders;
- reflect on whether this RIDLs activity provides a template for engaging with relevant organisations in different national contexts, or Europe-wide, and considering what these organisations might be.

The Panel session will allow ample time for feedback from delegates and discussion. It should be of interest to those who wish to participate in efforts to increase the recognition of IDL as a strategic and policy issue beyond its traditional confines in education and librarianship.

Keywords: *information literacy, data literacy, coalition, networking, higher education, employment*

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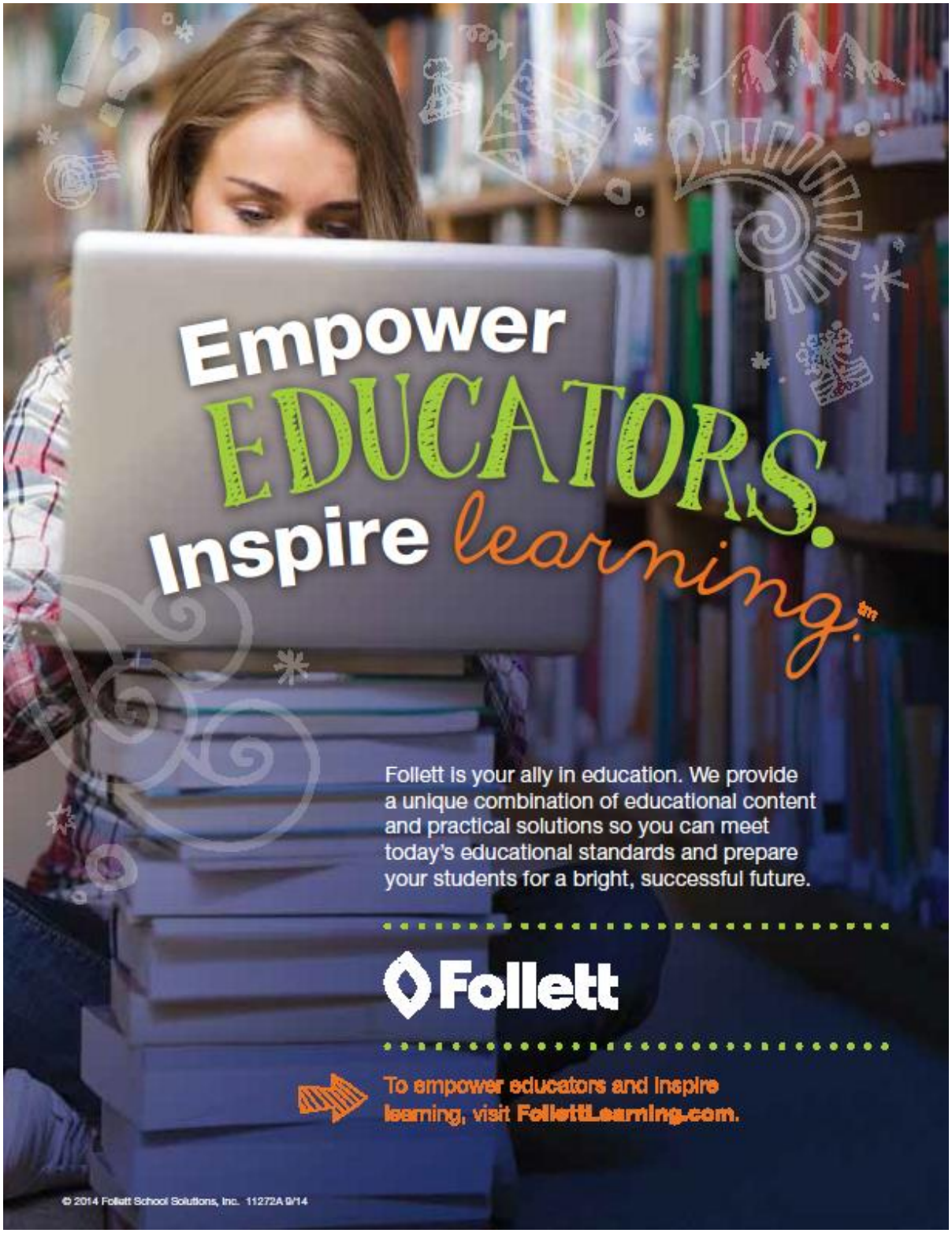

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