

## Tallinn University Information Sciences of the School of Digital Technologies



## The Third European Conference on Information Literacy (ECIL) October 19-22, 2015, Tallinn, Estonia

Editors: Sonja Špiranec, Sirje Virkus, Serap Kurbanoğlu, Esther Grassian, Diane Mizrachi, Loriene Roy, Denis Kos



## European Conference on Information Literacy (ECIL)

October 19-22, 2015, Tallinn, Estonia **Abstracts** 

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## ORGANIZATION

European Conference on Information Literacy (ECIL) was co-organized by the Department of Information Management of Hacettepe University, the Department of Information and Communication Sciences of Zagreb University and the Information Sciences of the School of Digital Technologies of Tallinn University.

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## Foreword

I am honored to have been invited once again to write this brief Foreword for the Book of Abstracts for the European Conference on Information Literacy (ECIL) which took place in Tallinn, Estonia in October, 2015. The ECIL series of conferences began in Istanbul, Turkey, in 2013, and continued in 2014 in Dubrovnik, Croatia.

This set of annual international meetings is a wonderful opportunity for information literacy professionals everywhere to share their experiences, ideas and proposals for how to advance the information literacy concept and practice worldwide. It is a unique chance for all members of the IL communities in every country to interchange their views on what has become a powerful prerequisite to everyone enjoying the benefits of the Information Society. I hope you will go through these abstracts of papers presented at the conference, and perhaps apply some of the approaches advocated in your country. And I hope you will begin making plans to attend ECIL 2016!

Dr. Forest Woody Horton, Jr.

## PREFACE

We have the great pleasure to welcome you to the 3rd European Conference on Information Literacy - ECIL 2015 - in Tallinn, Estonia!

The main theme of the third ECIL conference is Information Literacy in the Green Society. Information literacy and sustainability being the main theme, ECIL 2015 aims to bring together researchers, information professionals, media specialists, educators, policy makers and all related parties from around the world to exchange knowledge and experience and discuss current issues and recent developments.

In all, 226 proposals were submitted to the Conference. Contributions came from 50 different countries: Albania, Armenia, Australia, Australia, Australia, Belgium, Bangladesh, Bulgaria, Canada, China, Croatia, Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, India, Iran, Italy, Jamaica, Japan, Lithuania, Mexico, Nigeria, Norway, Oman, Pakistan, Poland, Portugal, Puerto Rico, Qatar, Romania, Russia, Serbia, Slovak Republic, Slovenia, South Africa, Spain, Sweden, Switzerland, Taiwan, Thailand, The Netherlands, Turkey, UK, Ukraine, United Arab Emirates, and USA. All submissions were subjected to a double-blind review process and 222 were accepted that address a wide variety of different perspectives, methods, theories and outcomes, ranging from the theoretical to practical contributions.

This Book of Abstracts consists of a total of 195 contributions: three keynotes, five invited papers, 89 papers, nine doctoral papers, 37 best practices, 22 PechaKuchas, 18 posters, ten workshops and two panels.

We are grateful to many organizations and individuals for their support. We would like to express our deep gratitude to EAS (Enterprise Estonia) for the generous financial support. Our special thanks go to UNESCO and IFLA, two major organizations which have contributed tremendously to the development of Information Literacy, for providing their patronage. We would like to take this opportunity to thank ECIL2015 conference keynote speakers Susan Danby, Carol Collier Kuhlthau and Sonia Livingstone; invited speakers Gobinda Chowdhury, Heidi Julien, Mihkel Kangur, Mandy Lupton, Eero Sormunen and Olof Sundin; authors and presenters of papers, best practices, PechaKuchas, posters, workshops and panels; and session chairs. We would like to thank, and acknowledge the hard work of the members of the Standing and Programme Committees who invested their time generously to ensure the timely review of the submitted manuscripts. Our thanks go to all participants of ECIL 2015, for making the event a great success.

Finally, we hope that you will fully enjoy four conference days of sharing, discussing, learning and networking, and that you will remember your stay in Tallinn as an enriching experience both professionally and personally.

On behalf of the host organization and the Local Organizing Committee

Sirje Virkus

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# Keynotes

## "How Do You Make Paper White?" Young Children Making Connections Using the Web

#### Susan Danby

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Very young children are engaging in complex strategies of Web searching at home and school. Using video-recordings collected from a number of ethnographic studies, I explore the experiences of preschool-aged children as they manage their knowledge worlds and their social worlds. The video-recordings show them searching, for example, for familiar places on the Web-based application Google Earth<sup>™</sup> and initiating information searches exploring a diversity of topics, such as how to find their preschool and how to make paper white. I explore how they collaboratively negotiate these explorations. I also consider the resources they draw on as support in their search practices. Through talk around and about the Web, children gain access to local, community and global knowledge, as well as to technological understandings and practices. As well, they assemble social relationships and make sense of their social, physical and cultural worlds. What the children see and do on the digital screen shows complex, sustained and multifaceted knowledge construction and social interaction. Considering young children's communicative competence as they connect with the Web, and with others, has implications for supporting their learning lives.

Keywords: preschool-aged children, search practices, communicative competence, knowledge construction, social interaction

## **RETHINKING INFORMATION LITERACY IN THE 21ST CENTURY**

#### Carol Collier Kuhlthau

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There have been extraordinary advances in information technology since information literacy emerged in the last quarter of the 20th century. These advances have brought rapid change in all aspects of our lives. The workplace has changed. The way we communicate has changed. Our communities are changing. Are our notions of information literacy outdated? It is time to rethink information literacy for the shifting demands of the global information society in the 21st century. This paper will discuss how information literacy can prepare people to meet these challenges.

Keywords: information literacy, challenges, 21st century

## MODELLING CHILDREN'S EXPERIENCES OF ONLINE SKILLS, Opportunities and Risks: A European Perspective

#### Sonia Livingstone

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How do children's digital skills and media competences relate to their experiences of online opportunities or risks? How do efforts to measure and model children's mediated lives inform the development of policy? This presentation will reflect on the interdependencies between these two questions by discussing the approach to evidence-based policy developed by the European research network, EU Kids Online. Our work has encompassed the crucial period in which many European children gained routine internet access, seeing how they have embedded digital media of all kinds in their learning, domestic and social lives, and tracking the extent to which this has amplified the range and depth of opportunities and risks in their everyday experience. Although the network focused mainly on 9-to 16-year-olds, its recent work has also encompassed younger children, reflecting the fact that they too are becoming internet users and digitally-skilled. How has its approach, measures, explanatory model and dialogue with stakeholders evolved? And what difficulties has it encountered that future researchers and policy makers might learn from?

Keywords: children, digital skills, media competences, online opportunities, online risks, evidence-based policy, EU Kids Online

# **INVITED PAPERS**

### FROM INFORMATION LITERACY TO ENVIRONMENTAL LITERACY: DESIGN AND DELIVERY OF SUSTAINABLE INFORMATION SERVICES

#### Gobinda Chowdhury

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Sustainability has become a major agenda item for research and policy-making in almost every sphere of life. There are three forms of sustainability – economic sustainability, social sustainability and environmental sustainability. In the context of information systems and services, economic sustainability calls for sustainable funding support and impact or value for money; social sustainability refers to equitable and better access to, and use of, information for everyone in society; and environmental sustainability requires that the environmental impact of information systems and services should be reduced as far as practicable.

One of the major goals of information literacy is to promote the use of information systems and services, and in that context information literacy programmes promote the social sustainability of information services. However, in order to promote access and use of information, people should not only be information literate, additional efforts must be made to make information systems and services more user-centred and adaptable so that the users have to spend minimum time and effort to access and use information, and instead they should have more time for accomplishing the task or problem in hand. The more difficult an information system or service is to use, the more time a user needs to spend on it, and this increases the environmental costs. Studies show that more than half of the environmental costs of ICT, in information systems and services, come from the end user energy costs. More user-and context-specific services and applications can not only reduce the user time and effort, they can improve user experience and thus improve the impact of information services. Furthermore, environmental literacy of the end users, and more importantly environmental factors in the decision-making processes for design and implementation can significantly improve the environmental sustainability of information systems and services. This talk will address the above issues, and based on evidences from some ongoing research activities, it will identify some emerging areas of research that can improve the social and environmental, and thereby the economic, sustainability of digital information systems and services.

Keywords: information literacy, environmental literacy, sustainable information services

## **Beyond the Hyperbole: Information Literacy Reconsidered**

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The conceptual confusion arising from what we variously term information/digital/media/ICT/computer/ computational/ technological/trans-/meta- literacy/fluency, is tricky enough, but this lack of clarity is less relevant than the burdens placed on these concepts. While the value of developing these knowledge and skill sets appears obvious, claims that information literacy (a term I will use to approximate this set of concepts) is key to achieving an immense range of lofty goals stands on shaky ground. Claims for the expected outcomes of information literacy, promulgated in a range of documents from official bodies around the world, include: sustainable human development, participatory civic societies, world peace, freedom, democracy, good governance, intercultural knowledge and mutual understanding, freedom of expression, an informed and critically analytical citizenry, employability, lifelong learning, and economic prosperity. Such claims place considerable intellectual, political, and practical burdens on the notion of information literacy (or its conceptual cousins). In addition, these claims fail to account for the place of any "literacy" or "fluency" within the context of information practices in general, which are socially and culturally situated, mediated, and constructed. Accounting for social conditions, as well as for the complexity of information behaviour in general, significantly minimizes the potential for information literacy to ameliorate social and political challenges. This talk discusses misplaced expectations for information literacy, from theoretical and practical perspectives.

Keywords: information literacy, digital literacy, information behaviour

## **CRITICAL EVALUATION OF INFORMATION: GENERIC, SITUATED, TRANSFORMATIVE AND EXPRESSIVE WINDOWS**

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Critical evaluation of information is a fundamental element of information literacy and inquiry learning. In formal education, a number of rubrics and checklists exist for evaluating information that use criteria such as provenance, currency, authority, credibility, trustworthiness, accuracy and bias. Some of these are related to particular sources such as web-based, journalistic and scholarly information, while others relate to particular disciplines such as interrogation of primary sources in an historical investigation. In this presentation I explore my analysis of a range of ways of evaluating information using the Generic, Situated and Transformative perspectives from the GeST windows information literacy theoretical model (Lupton & Bruce 2010).

The Generic window sees information as external and objective. Information is codified and exists in traditional forms such as texts. Information is evaluated using surface signs such as currency, bias and provenance. By contrast, the Situated window sees information as subjective and subject to socio-cultural forces. Information is evaluated by placing it in a disciplinary, cultural, social, political, economic and historical context. Information is considered as traditional tangible forms but is also seen as affective, kinaesthetic and embodied stimuli. The Transformative window builds on the Situated Window in taking a cultural studies approach. It sees information as internal, subjective and transformative. Information is evaluated by examining empowerment and disempowerment in information creation and dissemination. The outcome of the evaluation process is consciousness raising and social activism.

I extend the original GeST model by incorporating an Expressive window to form the GeSTE model. The Expressive window sees information as internal, subjective and transformative. Information is evaluated through considering expression of self, meaning making, reflection, affect and aesthetics. This window foregrounds the content and context of information as art. As such, information is regarded as feelings, observations, intuitions, thoughts and ideas of the creator and the user. In discussing this window I introduce the concept of "information nourishment". I argue that the elements of the Expressive window have largely been ignored in traditional understandings of information literacy. I demonstrate that viewing evaluation of information through the four windows illuminates different qualities, and I argue that all four windows should be used in information literacy education.

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Keywords: critical evaluation, information literacy, GeSTE windows

## INFORMATION LITERACY INSTRUCTION: WHAT CAN WE LEARN FROM READING AND WRITING RESEARCH?

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Information seeking research has contributed to the development of pedagogical frameworks for information literacy (IL) instruction. The most prominent example of this is Guided Inquiry (Kuhlthau, Maniotes, & Caspari, 2007), which is consistently built on the Information Search Process (ISP) model by Kuhlthau (2004). Also the other pedagogical frameworks for IL instruction such as Big6 (Eisenberg & Berkowitz, 1990), and ASE (Gross, Armstrong, & Latham, 2012) share similar theoretical underpinnings. The speaker argues that too unanimous leaning on information seeking research restrict our possibilities to develop information literacy instruction.

The focus of information seeking research is on the early stages of the inquiry process: searching, evaluation and selection of sources for use. The actual use of information - reading as a meaning making process, and writing as a knowledge construction process - has not earned much attention. The talk will discuss how studies in online reading (e.g., Leu et al., 2013), epistemic beliefs (e.g., Barzilai & Zohar, 2012), and comprehension of multiple sources (e.g., Strømsø & Bråten, 2013) expand the traditional conceptions of information literacy and information searching for learning. All three research areas are closely related to each other and help us to understand more deeply the complexity of information interactions; including the stages of searching and selection of sources.

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Keywords: information literacy instruction, online reading, epistemic beliefs, reading-to-write, online comprehension

## **OUTSOURCING TRUST TO THE INFORMATION INFRASTRUCTURE: A SOCIO-MATERIAL PERSPECTIVE**

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Media literacy research and Information literacy research have both called our attention to the difficulties students have with the critical evaluation of information. However, the practice of searching for information online, typically equated with the use of search engines, is nowadays often taken for granted – by students, teachers and even by researchers. In this presentation, it will be argued that today's culture of search demands a critical understanding of the co-dependence of searching and evaluation of information. In recent years, Media and Information Literacy (MIL) has evolved as a concept bringing together two distinct, yet overlapping research traditions. In this presentation, examples will be given of and discussed how these two research traditions, media literacy and information literacy, can complement each other to make possible richer understandings and conceptualisations of literacies for contemporary media and information landscape.

The Scandinavian languages have different version of the word "källkritik" [Swedish] to refer to how you assess and evaluate specific sources of information and in German the practice is referred to as "Quellenkritik" (Hjørland, 2008). As a concept, it has developed particularly within the academic discipline of history. In English, a direct translation is "source criticism", but that wording does not have the same established meaning as in the Scandinavian languages or in German (Hjørland, 2008). Since the development of digital information tools has the practice of source criticism attracted a renewed interest. With the spread of the Internet, a growing responsibility for students to search and assess the relevance and trustworthiness of online information has been called for (e.g. Sundin & Francke, 2009). Students are not just supposed to read literature provided by teachers and librarians, they are nowadays also asked to find information on their own and to build their own arguments. As a consequence, there exists an abundance of guidelines, recommendations and checklists for how to assess information available online. These instructions have often been criticised for among other things, not considering critical aspects (e.g. Meola, 2004).

The presentation takes its cue from research on the role and function of information searching in compulsory school settings. The preliminary results from a focus group study with 39 compulsory schools teachers in six focus groups are discussed. The teachers stated that their students do not in general question the relevance ranking of search engines; what is at top of Google is what is read. At the same time, the result makes also visible the difficulties the teachers have in conceptualising searching as an object of teaching, beyond pure functional skills. A socio-material perspective provides tools for analysing how students, and in fact teachers, as a consequence outsource relevance assessment and assessment of trust to the information infrastructure. Source criticism of individual web pages is assigned an obvious role by the teachers, but searching is rarely seen from a critical perspective. However, the information infrastructure that search engines contribute to, mediate not just access to information, but it co-produces what there is to know in the first place. The presentation concludes that source criticism need to be supplemented with search criticism and the two practices should in fact be seen as impossible to separate from each other.

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Keywords: media and information literacy, source criticism, searching, trust

## PAPERS

# **"Digital Rights: A Password for the Future": A Study of Digital Consumption by Portuguese Youth**

#### Inês Amaral, Paula Lopes, Bruno Reis and Célia Quintas

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The research project, "Digital Rights: A Password for the Future", is framed within the context of an eighteen lecture series in district capitals of Portugal on consumption, digital literacy, and rights. The project aims to identify digital literacy as well as practices and media consumption, understand perceptions of new media, explain risk situations on the Internet, and provide information about of rights and duties in the digital world.

In this paper we present the results of the Digital Rights project which was developed by a group of researchers from the Autonomous University of Lisbon in partnership with DECO to describe indicators of practical and digital consumption of young Portuguese students. By analyzing the most common activities online, digital practices, digital consumption and behavior on social networks, our aim is to describe the generation of the new millennium in an era of screens and mobility.

We employed a quantitative empirical research strategy using a survey questionnaire administered to a sample of 1,814 students attending basic education (third cycle) in the secondary and vocational schools in the eighteen capitals of Portugal's Continental district. We collected data between March 2014 and January 2015.

We focused our study on dimensions and indicators that measure levels of digital literacy, consumption, and perception of rights in the digital space. Our paper evaluated a possible direct relationship between practical and technical skills. Our objectives for this paper are to discuss whether (1) the most common online activities induce digital practices that have direct relationships with creative and communication skills; and, (2) how network sociability is related to individual technical capabilities.

Our results revealed that almost 90 percent of young people surveyed said that access the Internet every day with an average use time of 253 minutes per day. About 40 percent of students stated they were online about two hours per day, but nearly 10 percent surfed online more than eight hours a day. We found that the later, intensive users were more apt to be boys, older respondents and/or students of vocational education. Our findings also showed that those who participated daily in social networks were more apt to be girls and/or respondents who attended secondary education. Most young people (69 percent) reported that they had only one active profile on social networks with fewer than 1,000 followers or friends (71 percent). Respondents' searches for news increased with increasing schooling. Many more male respondents sought news information daily (72 percent of boys to 28 percent of girls). In all districts from Continental Portugal, the frequencies of daily Internet usage are above 70 percent.

The global findings of this study allow us to conclude that (1) there is a direct relationship between digital consumption and social practices and, (2) technical skills determine the technological consumption of the millennial generation.

Keywords: digital consumption, digital practices, digital media, audiences, practices, youth

# **DIGITAL LITERACY OF SCHOOL LEADERS: WHAT IMPACTS IN SCHOOLS? RESULTS OF TWO STUDIES FROM PORTUGAL**

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Since the beginning of this century profound changes have been introduced in educational institutions in Portugal. We can highlight the growing autonomy, the widespread use of technology in all school activities and the implementation of school networks. The Technological Plan for Education (2007-2010) has defined a set of objectives which led to the introduction of technology at school, including the internet in high-speed broadband and ICT skills training and certification for teachers. The development of skills in information and communication technologies (ICT) and its integration in teaching-learning processes became unavoidable objectives of education systems in Portugal and Europe.

This scenario has transformed professional teacher practices within the classroom context, and also those of school leaders who have been trained for the performance of new functions, including the development of digital skills at different levels. The literature stresses the importance of the leaders in the school arena, by trying to understand how their competences, namely in digital literacy, are reflected in local political decisions and how this is felt in terms of pedagogical innovation related to the use of digital technologies.

This article aims to present results from two studies conducted in secondary Portuguese schools. Those studies focused on the school members responsible for the development of projects related to digital literacies. In this context, the concept of digital literacy is defined according to ALA: the ability to use ICT to find, evaluate, create, and communicate information, requiring both cognitive and technical skills (ALA).

The abovementioned studies have the following main objectives: to identify the skills profile of those leaders, particularly in terms of digital literacy; to relate this profile to local implementation of pedagogical practices involving digital technologies; and to contribute to knowledge of the role of leaders concerning the sustainability of these practices.

Data collection involved the analysis of guidance documents for national and local educational policies and also the application of questionnaires and interviews to the leaders of those projects. The results were submitted to a statistical analysis, in the case of the surveys, and content analysis of the interviews.

The results show that in a first phase, corresponding to the implementation of the Technological Plan for Education, schools were equipped with appropriate technological resources and teachers developed digital literacy skills. The most skilled leaders in Digital Literacy revealed more encouraging attitudes towards their colleagues and created better conditions for the use of technology in school, particularly in the classroom context. Transformational leadership also generates a better environment for the involvement of various educational actors.

However, it seems clear that the sustainability of innovation requires a reinforcement of teacher training directly connected to teaching needs, thus relating digital literacies and multiliteracies with a specific subject matter. Having all these aspects in consideration, we also intend to present a set of recommendations arising from reflection on the results obtained in the two studies.

Keywords: educational innovation, school leadership, transformational leadership, digital literacy, Technological Plan for Education

### Examining Digital Literacy Skills Regarding the Curriculum: A Case Study Intended for the Students at the Department of Information Management

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Digital literacy is described as the skills to use computers, internet, mobile devices, mobile applications, smart devices and similar technologies efficiently. Reaching the necessary information by using aforementioned technologies, maintaining interaction with information, processing, presenting, and sharing information and all other similar skills fall into the scope of digital literacy. An individual who can easily use the current technology and include information literacy skills into this use is considered digitally literate (Boechler, Dragon & Wasniewski, 2014; Bawden 2008; Lankshear & Knobel, 2005).

Technology is a major component of today's world and it solidifies its position every passing day. Therefore, rendering technology as a subsistent part of education is a necessity both for today and for tomorrow. Improving digital literacy is emphasized in the todo list of adapting technology into education (The NMC Horizon Report: 2015 Higher Education Edition). It is mentioned that, individuals who are digital literates would be more inclined to lifelong learning and would have a higher expectancy of academic success.

As a result of certain changes in the business world in terms of functioning and approach, businesses, institutions and organizations need employees who have higher digital literacy levels and who can keep up with changes. Businesses and institutions are incorporating more and more information technologies each day. Similarly, information centers have evolved through technology in the recent years. Consequently, individuals are supposed to increase their skills to use technology and keep up with the technological changes.

The Department of Information Management, Hacettepe University, updated its undergraduate curriculum taking the necessities of the era into consideration and increased the number of courses related to information technologies. Although there isn't a direct mention of digital literacy among the reasons for the curriculum updates, it is obvious from the suggested and actualized changes that the new curriculum aims to empower individuals with higher digital literacy skills (Tonta, 2012).

Within the scope of this study, digital literacy skills of a group of students who are enrolled in the new curriculum will be examined as part of the Designing Information Systems and Management of Information Systems courses, and the level of digital literacy skills will be discussed by making associations to the new curriculum. The base for examining digital literacy skills will be the works and reports created and arranged by the students in their relevant courses and environments, which they will design for sharing the information and findings. Following this study, which will be supported by discussions with students, the contribution of the new curriculum to digital literacy skills will be compared to the students' previous courses. The findings of the study are expected to contribute to evaluating the curriculum and shed light on what has to be done on behalf of improving digital literacy skills.

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Keywords: digital literacy, digital literacy education, curriculum evaluation
# **EVALUATION OF INFORMATION LITERACY OF SLOVENIAN UNIVERSITY STUDENTS<sup>1</sup>**

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### BACKGROUND

This contribution summarizes the results of the evaluation of information literacy of 612 students at six Slovenian faculties enrolled in study programmes of life sciences, health, technologies, education of science teachers, informatics, and management. The study was performed within the project J5-5535, entitled "Development of information literacy of university students as a support for solving authentic science problems", supported by the Slovenian Research Agency (Boh et al., 2015a).

### Methodology

An information literacy test (ILT) that was developed, verified and validated by the authors (Boh et al., 2015b), served as the main IL measuring instrument. ILT consists of 40 multiple choice questions with four possible answers, and follows the recommendations of known information literacy standards for higher education. Content-wise, the test covers a diversity of topics defined by the IL standards, and provides difficulty levels from lower to higher cognitive skills. Examples presented in the test aim at clarity and unambiguity, and at suitability for diverse groups of university students. Statistical analyses of ILT results from 612 students were performed in SPSS.

### RESULTS

The results suggest that, on average, Slovenian students' IL is satisfactory, and significantly improves with each progressing year of education. On average, students are aware of various information sources and specialised scientific databases, and adequately evaluate the collected information. They possess skills to use information in academic work and to synthesise data into knowledge quite successfully. However, students are less proficient in advanced and expert search strategies, used in specialised scientific and patent databases. The main deficit in students' knowledge, understanding and ability of problem solving, is evident in topics related to intellectual property rights, including authors' rights and industrial intellectual property, and in ethical issues related to acquisition and use of information. In this respect, students that participated in an IL-specific study course, significantly improved their ILT achievement, most significantly in topics where their pre-knowledge was lower - intellectual property and ethics.

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Keywords: information literacy, higher education, evaluation, Slovenia

<sup>1</sup> Prepared in cooperation with Alenka Baggia<sup>2</sup>, Vesna Ferk Savec<sup>1</sup>, Saša Aleksej Glažar<sup>1</sup>, Mojca Juriševič<sup>1</sup>, Mirjana Kljajić Borštnar<sup>2</sup>, Andreja Pucihar<sup>2</sup>, Blaž Rodič<sup>3</sup>, Irena Sajovic<sup>1</sup> and Margareta Vrtačnik<sup>1</sup> from following universities <sup>1</sup>University of Ljubljana, <sup>2</sup>University of Maribor; <sup>3</sup>Faculty of information studies Novo Mesto

## **Reflecting on Diverse Teaching Methodologies for an Information Literacy Programme for Large Groups**

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This paper reports on a teaching programme for information literacy (IL) at the University of Pretoria in South Africa. The programme is presented as a credit-bearing module, compulsory for all approximately 9,000 first year students who enroll annually at the University. We describe the module content and the teaching methodologies that we have developed. We show how the students' computer literacy is enhanced and re-enforced through their IL practice and through online self-study materials. Originally, the IL content was presented as one size fits all," without making provision for different thinking and learning styles. Based on insights from the Hermann Brain Dominance Instrument (De Boer et al. 2011, 2012, 2013), we analysed our existing teaching materials and came to the conclusion that we only made provision for students with a left-brain thinking and learning preference. We redeveloped the study materials and rewrote our prescribed textbook (Bothma et al. 2014–2015) to make provisions for diverse thinking styles. The textbook was published as a paper book and an enhanced e-book with a number of interactive features. We will briefly describe the redeveloped teaching materials and teaching methodologies.

Students have evaluated the module content and the importance of information and computer literacy on a number of occasions. These evaluations showed a consistent positive evaluation of the necessity of information and computer literacy not only for their current studies but also for their future professional lives. We conducted a further in-depth evaluation of the module content, teaching methodologies, and student attitudes towards information and computer literacy at the end of the last academic semester. In our paper we will describe this evaluation in detail, providing a longitudinal overview of students' perceptions of the module.

We will make recommendations based on this longitudinal research, on improving module content and presentation, with the emphasis on further refining interactive features in the teaching and learning materials.

The research methodologies we followed included a descriptive analysis of the module, its content and teaching methodologies, and the analysis of data collected by means of a questionnaire with Likert scale and open-ended questions.

Our research contributes through its documentation of a case study of teaching information literacy to large groups at a specific institution and the perceptions of students of the value of information and computer literacy. In addition, we present recommendations on improving content and teaching methodologies through enhanced interactive technologies.

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Keywords: teaching information literacy, large groups, curriculum development, Herrmann Brain Dominance Instrument, HBDI

## **PRINT VS. ELECTRONIC: WHAT DO FRENCH STUDENTS PREFER IN THEIR ACADEMIC READING MATERIAL?**

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Digital technology has deeply influenced our daily activity, our economy, our behaviors, and our social practices. The digital revolution also shaped education, transforming the way of learning and reading. Since 2000, France has experienced a digital shift in higher education. One of the priorities for the Digital Economy Development Plan (Besson 2008) was to offer a digital environment for all students and to make available, by the end of 2012, 100 percent of educational materials in digital format. Today, the number of digital resources has increased and the nature of the textbooks has changed, especially with e-education, e-learning, m-learning and Massive Open Online Courses (MOOCs). But is this format adapted to the needs of students when engaging with their academic reading?

We conducted a self-administrated online survey using the open source software Lime Survey to be able to answer this question. We adapted the instrument from the questionnaire developed by Mizrachi (Mizrachi 2014) with her permission. Students, from all levels, had to answer 16 questions using a five-point Likert scale of agreement from "strongly disagree" to "strongly agree". The survey also included demographic questions to allow for comparisons such as age, gender, and discipline.

We sent a message to university administrators, head academic librarians, as well as colleagues and acquaintances from different universities asking them to spread the message among their students. Only a few academic librarians agreed to relay the information, which prompted us to use social media, especially Facebook, to reach students. The author joined around 200 student groups from different universities and disciplines and posted a message asking students to express their preferences about the format, including a link to the survey, to each group. The advantages of this approach were that it resulted in a large body of responses and opportunities for comparative analysis by disciplines. The data were collected over eight weeks starting on 1 March 2015.

Several early studies in France (Epron 2013) and in the USA (Mizrachi 2014) assessed that material on paper is still more used than material available in electronic format. Is this assertion still valid with the new generation of digital natives?

The results of this survey gave an indication about students' reading preferences and use of print and electronic resources as well as the device they used most often to read the electronic resources and textbooks. We used Chi-square tests of independence to test whether factors such as gender, age, level of study, and discipline had an incidence on the preferred format.

The purpose of this study was to gather data that would help academic librarians in making collection development decisions for their academic departments as well as teachers in their reading recommendations. The results may help to find the right balance between providing access to print and digital documents.

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Keywords: academic readings, France, higher education

# **COPYRIGHT LITERACY OF DOCTORAL STUDENTS IN FRANCE**

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Doctoral students today are facing permanent and unprecedented challenges dealing with copyright issues. The Internet and digital technology have created a new territory for copyright laws and changed the way we conduct research. This has resulted in easier ways to access and use information and to reproduce documents. Even the publishing process has been affected by the open access movement and Creative Commons licenses. Doctoral students in most disciplines must complete a thesis as a requirement for their diploma and, as copyright issues are getting more and more complex, unwitting infringement of copyright laws can happen. To avoid this problem, copyright literacy awareness is important.

This state of fact leads us to study the copyright literacy of doctoral students in France. We wanted to know if they are familiar with copyright issues like intellectual property, publishing rights and open rights movement. Are doctoral students sufficiently well prepared to face the complexity of copyright rules in their everyday school life? Is their background, including training and formal education, well adapted to their needs? Is there a significant disparity between the copyright literacy of doctoral students and the subject discipline to which they belong?

We conducted a web-based survey between 17 March and 17 April 2015 to answer these questions. The questionnaire included four groups of questions: the first one intended to measure the level of doctoral students' awareness of copyright issues; the second group was about their practices related to intellectual property and copyright; the third dealt with training; and the fourth group asked demographic information. We mailed this questionnaire to the directors of 284 doctoral schools in France<sup>2</sup>, asking them to spread the survey among their students. We collected more than 1,000 completed answers following this approach.

This kind of study was never been done before. Our research produced comprehensive knowledge regarding the copyright literacy of French doctoral students. We measured the level of their awareness as well as the level of their ability to master the subtleties of the publishers' different license agreements. We addressed questions concerning the relation between discipline and the level of awareness and how they manage to get informed about copyright laws and from which sources.

Our study filled a gap by shedding light on the copyright literacy of doctoral students. Our results will help doctoral schools as they take steps to adjust their curricula for training or counseling students.

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Keywords: copyright literacy, France, doctoral students, higher education

<sup>2</sup> Ministère de l'éducation nationale de l'enseignement supérieur et de la recherche. Écoles doctorales en open data. Retrieved from http://goo.gl/8xR2LZ 23/04/2014

## **Building an Information Literacy Program for High School Students of**

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## INTRODUCTION - AIM

This paper aims to investigate the ways in which a special library of academic standards could contribute to the work of Secondary's Education teachers, towards the strengthening of their students' information skills, as preparation for their smoother transition to a university level research environment. The idea stemmed from a former study that was conducted among undergraduate university students of astronomy in Greece (Brindesi, Monopoli & Kapidakis, 2012). That study revealed the gaps in undergraduate students' information skills and their need for an Information Literacy (IL) program with emphasis on basic research skills. In this paper we describe the collaboration of the scientific library of the Eugenides Foundation with two different schools in its area for the creation of a project-course on astronomy, which incorporates workshops for the advancement of students' IL skills. .

## Methodology

We designed our research process in accordance with the action research guidelines, combined with a constructivist viewpoint, as we needed active participation and dynamic reflection of the learners during the learning process. The necessary data for students' needs, as well as for the final outcomes, were being collected through observation, questionnaires, analysis and ongoing assessment of each group of students' work during the presentation of every subtask assigned.

### OUTCOMES

The outcomes of the whole effort, despite the limitations and difficulties, were very positive. Students of both schools responded well to the new advanced research environment, though facing various challenges. They had the opportunity to learn a lot of new things concerning their research methodologies, they gained a deeper understanding of their subject, and finally they produced impressive and well-structured works.

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Keywords: information literacy, Greek secondary education, active learning, astronomy projects, participatory action research

## INFORMATION CULTURE IN MEDIA ORGANIZATIONS: A Case Study of Thai Public Televisions

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An information society also depends on the information culture created by media organizations. Information culture is the perception of information work and information practices by the members of a media organizations. Information culture as part of the organizational culture may affect organizational effectiveness. Further, the goals of information culture are associated with how services are delivered to citizens. Television is a form of media that plays an important role in disseminating information to the public.

This paper aims to study the information culture, the status of information culture, and the factors affecting information culture in the National Broadcasting Services of Thailand and Thai Public Broadcasting Service. A qualitative research method was applied by interviewing 40 mass media specialists who work in administrative level and supportive level of two public television stations in Thailand. The data were collected through in-depth interviews. Two parts of the interview questions comprised of the processes of organizational culture and the information culture in Thai public televisions. Content analysis was used to find descriptive patterns from the interviews.

It was found that group meetings with organizational communication, teamwork with the concern of internal communication and information accuracy are the success factors in Thai Public Televisions. Strong information culture in media organizations may derive from good media and information literacy skills of media specialists.

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Keywords: information culture, organizational culture, Thai Public Broadcasting Service

## ARGUMENT-DRIVEN INQUIRY IN THE INFORMATION LITERACY INSTRUCTION IN TAIWAN

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Many researchers allege that acquiring argumentative reading and writing strategies as well as practices are important for school curricular reforms. The abilities to identify the underlying argument and its claims, warrants, and evidences are crucial for academic success (Hillocks, 2010; Kuhn, 2008; Newell, Beach, Smith & Van Der Heide, 2011). In fact, the essence of argument contains logical and critical thinking, which is a skill critical to participating in a democratic society. Two main challenges in teaching argument are mentioned in studies. First, both teachers and students lack clear concepts about structures of argumentative texts because most textbooks often favor narrative and explanatory texts over argumentative ones (Newell et al., 2011). Second, there is no actual audience for students formulating arguments in a classroom setting because their primary audience is their teacher. Thus, Kuhn (2008) and Llewellyn (2013) suggested that there is a need to build an argument-driven inquiry to engage students in a meaningful learning environment so their critical thinking can be developed. The purpose of this study was to investigate the effects of argument-driven inquiry information literacy instruction on fifth-graders' argumentative reasoning, and teachers' opinions on the instruction.

This study employed a mixed-method case study using both qualitative and quantitative methods. It was conducted in an elementary school in Taiwan and lasted for seventeen weeks. The research site was a fifth-grade classroom of 30 students. The information literacy instruction was taught once a week week by a teacher librarian who collaborated with a classroom teacher. The classroom teacher taught the basics of argumentative texts in a Chinese course. They designed an inquiry project, titled "*Controversial Persons Inquiry*," in the information literacy and Chinese courses to cultivate students' argumentative reasoning. The inquiry activities were designed according to the Big6 model (Eisenberg & Berkowitz, 1999). The Argument Test was used for the pretest and posttest. Research data collected included interviews, participant observations, tests, and document analysis. The results showed that using argument-driven inquiry in fifth-grade information literacy curriculum was an effective project for cultivating students' argument skills. Their overall argument performance was improved significantly. They understood the purposes and basics of argumentative texts, and in flexibly applying claims, evidences and warrants in a new context. Both the teacher librarian and classroom teacher suggested that we should systematically design argument-driven inquiry projects in information literacy curriculum, so that students' argumentative reasoning can be improved progressively.

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Keywords: argumentative skills, argument-driven, inquiry learning, information literacy, Big6 model

## INFORMATION LITERACY ABROAD: A GLOBAL SNAPSHOT OF American-style Academic Libraries

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## OBJECTIVE

The objective of this paper is to share the results of an exploratory study about information literacy in American-style academic libraries abroad. The findings contribute to the development of a global picture of information literacy, and include topics such as library instruction, instructional technology, instructional spaces, and assessment practices. Developing effective information literacy programs is challenging, and can be even more so in a variety of cultural settings. The findings of this study demonstrate how librarians all over the world meet this challenge.

### Метнор

The authors distributed an online questionnaire, via Qualtrics, to 51 American-style academic libraries in December 2014. Institutions surveyed are located in various countries ranging from Mexico to the United Arab Emirates to Singapore. All libraries surveyed fell under one of the following categories: autonomous American-style institutions (e. g., The American University in Cairo) or international branch campuses (e. g., NYU Abu Dhabi). Thirty-eight libraries completed the survey and provided detailed qualitative and quantitative information about their library instruction and information literacy programs.

### FINDINGS

The findings reveal that most librarians are considered staff and most instruction is completed by one or two librarians. Most libraries (55%) do not receive instruction assistance from library staff or paraprofessionals. Librarians provide instruction in English to diverse populations, and many students speak multiple languages or are classified as study abroad students. On average, each library provided 73 one-shot instruction sessions and almost 12 citation management workshops during the 2013-2014 academic year. Libraries closely collaborate with writing programs and first-year experience programs. Although few have developed a plan for implementation, 71% of libraries surveyed are familiar with ACRL's new Framework for Information Literacy.

### Conclusion

As the number of international institutions increases due to the globalization of higher education, it is essential that "international" librarians understand the state of information literacy and library instruction programs all over the world. Surveying Americanstyle libraries abroad helps paint a global picture of information literacy, while shedding light on the need for personnel and effective methods for teaching and assessing diverse student populations. Further studies on other types of international higher education institutions could be a valuable next step in this line of research. The findings of this study will be of interest to librarians all over the world particularly those who provide information literacy instruction to diverse student groups in a variety of cultural and educational settings.

Keywords: international libraries, information literacy, assessment, library instruction, survey

# METADATA LITERACY SKILLS: AN ANALYSIS OF LIS STUDENTS

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One of the services provided by cultural memory institutions to meet the ever changing expectations of their users is increasing visibility and accessibility of information sources by presenting their bibliographic descriptions with high quality metadata. Today, integrated library systems have moved bibliographic descriptions beyond the boundaries of card catalogs.

Metadata was conceptually defined by major associations and organizations in library and information science (LIS) in the 1990's and has subsequently been used in discussions about human-computer interaction tool for spatial datasets in sciences and social sciences. It is defined as standardized resource description schemes that reflect the usage, description, location, and accessibility of resources (NISO 2004, s.1). Metadata descriptions have essential roles in the development of information literacy skills as it is used in discovery, accessibility, visibility, awareness, and critical thinking skills (Caplan 2003; Iannella & Waugh 1997; Liu 2007). Metadata and cataloging skills are crucially important for information professionals not only in performing their professional activities but also in teaching information literacy skills. Skills used by information professionals for resource description processes (in other words, conceptualization, metadata creation, and studies on metadata issues) are considered as metadata literacy skills (Mitchell 2009). These skills are also emphasized as qualifications for information professionals working on the description of information resources (Intner 2007; Martin 2008). Consequently, equipping LIS students with metadata literacy skills during their LIS education becomes important as a way for students to understand attributes of information resources. This is one of the fundamental objectives of LIS curricula in many LIS schools.

The purpose of this study was to explore the levels of metadata literacy skills of students at the Department of Information Management of Hacettepe University. We used a five-point Likert scale web-based questionnaire to collect data about students' metadata literacy skills. We used cluster sampling to see the differences among students at different levels. Our findings not only provided information about the current level of students' metadata literacy skills but also provided guidance to faculty as they prepare the curricula.

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Keywords: metadata, metadata literacy, metadata literacy skills, LIS students

## How Do Home Educating Families' Experiences of Information Literacy Relate to Existing Models?

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In this paper I will discuss the findings of a small research project that explored the information literacy (IL) experiences of five home educating families and show how these findings can be related to existing models of IL. My research was constructivist with a grounded approach to data analysis and involved in-depth interviews with family groups where I interviewed parents and children together. The children in the study were aged between eight and seventeen.

Home education in the United Kingdom is a growing phenomenon (Morton, 2010). Estimates of the current number of home educated children in England vary between 45,250 and 150,000 but it is generally agreed that this number is rising (Hopwood, O' Neil, Castro and Hodgson, 2007). It is legal, unregulated to a large extent (Blok & Karsten, 2011), generally under-researched (Kunzman & Gaither, 2013) and potentially a difficult community for researchers to access (Hopwood, O'Neill, Castro, & Hodgson, 2007). From an IL perspective it is interesting because research suggests that it offers different information experiences from school based learning (Thomas & Pattinson, 2007). However, it does not seem to have been explored by IL researchers. Kunzman & Gaither (2013) argued that home education has much to teach us about education generally and this argument can be extended to IL. Research in this area can therefore be seen as a response to Tuominen, Savolainen, & Talja's (2005) suggestion that we need to understand how IL works in new environments. My interviews with the families showed that a skills based model of IL was a useful way to conceptualise their information experiences. However, there was evidence of IL that resisted this definition for example, in the representation of mothers as responsible for heuristic and holistic practices that were different to the knowledge based practices identified with fathers. There was strong evidence that IL was both constructed and situated for these families. I found that communities of practice (Safran 2008; Lloyd, 2007; Wenger, 1998) were one useful way to understand how IL was developed and shared both within families and within wider home educating communities. Lupton & Bruce's (2010) kernel model also offered me with a way to understand these families' experiences particularly in showing how when participants reflected they moved beyond seeing their IL as a generic skill to seeing it as situated and potentially transformative. My paper is based on a small study that is particular to the experiences of these families. Nevertheless, the richness of the interviews and the fact that it is a new landscape for IL researchers means that it is valuable and can be seen as adding to our understanding of IL outside formal educational models.

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Keywords: information literacy, information practices, home education, qualitative research

## ECOLOGICAL LITERACY: YOUTH AWARENESS OF HAZARDOUS SUBSTANCES IN CONSUMER PRODUCTS AND THEIR EFFECTS ON HUMAN HEALTH AND ENVIRONMENT

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Ecological literacy is the ability to understand principles of organization of ecosystems and to apply them in creating sustainable human communities. In today's world, where young people are faced with escalating environmental challenges, including resource depletion, environmentally linked illnesses, and climate change, ecological literacy has assumed an urgent importance.

Many consumer products (household chemicals, cosmetics, baby care, toys, indoor paints and varnishes) have lists of ingredients. Many common ingredients provide desired benefits (including longer shelf-life, pleasant odour and colour) but are not harmless. The Special Eurobarometer research instrument shows that Estonians are aware of risks linked to chemicals in consumer products, but most people do not consider product ingredient lists when they shop. Reasons include the difficulty of remembering chemical names and their effect, and finding clear, relevant information on the Internet or other sources.

In the European Union Life+ Project "Baltic Info Campaign on Hazardous Substances" we prepared the instructor's manual for teaching the topic of hazardous substances, and then tested it. These topics were investigated: 1) Estonian student awareness of the effects of hazardous substances on human health and the environment; and 2) the effect of the new teaching lessons on student awareness. During 2013-2014, more than 200 students (N=214) aged 10-19 from 15 schools participated in this research.

The study used questionnaires administered to the students before and after the lessons, with the second one conducted one week after the lessons. T-test analysis found that correct answer responses rose after the lesson for all questions. Female student answers increased 12 percent, male students, by 10 percent. One of the most remarkable changes related to the label, "Could irritate eyes and skin". In their responses to the open-ended question, after the lessons, students could provide appropriate means for avoiding chemical contact.

Instructors report that students appeared interested in the lessons.

Knowledge of hazardous substances and their risks is essential for human and ecosystem health. In our teaching materials attention is given to the means for avoiding contact with hazardous substances and using alternative products.

This presentation offers an overview of our research and development work in the frame of Life+ Project "Baltic Info Campaign on Hazardous Substances". The project will now be expanded to the Republic of Belarus. The teaching materials used in this research are available in Estonian, Latvian, Lithuanian, English, and Russian at: www.thinkbefore.eu

Keywords: ecological literacy, hazardous substances, teaching materials, youth awareness, healthy lifestyle

# Public Libraries and their Roles within the Context of e-Government Literacy

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Changes in managerial perspectives and innovative initiatives have led to significant transformations in enterprise governance structures. In this context, citizen centric approaches have appeared in management processes of enterprises and governmental organizations. As one reflection of citizen centric approaches, e-government applications have been implemented by the governments in order to provide efficient and high quality services offered by all governmental organizations. Additionally, e-government has been conceptually described and studied not only in the field of management but also in the field of library and information science (LIS). In this regard, the American Library Association (ALA) defined e-government as "the use of technology, particularly the Internet, as a means to deliver government services and to facilitate the interaction of the public with government entities" (e-Government Toolkit 2008). This point of view reflects that libraries and other cultural memory institutions as organizations that widely embrace technology and innovations have social responsibilities about public services. It is also known that many public library users benefit from the online public services available through the Internet access that is offered by public libraries. It has been stated in the literature that one of the social roles of public libraries is to provide citizens with access to and education of e-government services (Bertot, Jaeger, Langa & McClure 2006). Public libraries are not only Internet access points but they are also centers to access e-government services and guidance centers for citizens. They have also positive results in terms of the development of e-government services (Jaeger & Fleishman 2007). In this regard, it is possible to claim that public libraries are important transition points between citizens and governments.

Among cultural memory institutions, public libraries have vital roles as lifelong learning centers of the societies to which they belong. In order to achieve this role, public libraries offer many education and orientation programs such as information literacy education programs. In parallel with these programs, public libraries also provide instruction on accessing and usage of e-government applications and awareness raising activities that also address their patrons' need for "e-government literacy skills." In light of this information, the aim of the study is to draw a sample roadmap for Turkey that illustrates how public libraries related to providing e-government literacy programs were discussed through a literature review. In addition, the e-government literacy related services offered by public libraries in Turkey were compared with those of similar institutions around the world through an analysis of official Internet and e-government usage statistics. In conclusion recommendations about the improvements for e-government literacy services were presented.

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Keywords: e-government, e-government literacy, information literacy, public libraries

# USABILITY EVALUATION OF INFORMATION LITERACY PROGRAMMES: THE CASE STUDY OF "*Orion*"

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This paper refers to an evaluation project conducted at the ATEI of Thessaloniki during 2014. The project aimed to evaluate the information literacy (IL) programme of the institution, Orion. The programme was developed by the Library of ATEI in an effort to teach students how to specify autonomously their information needs, locate sources of information, evaluate retrieved information among the plethora of information available to them and to use it effectively, so as to promote knowledge and research activities. Orion is available to all members of the academic community and constitutes a vital part of the IL skills environment. To the achievement of these objectives, it is understood that incorporating IL across academic services constitutes a continuous effort from all faculty members and library staff, not only for its maintenance, but mainly for evaluating the efficiency and effectiveness of services.

Usability testing of information literacy programmes forms an integral part of any evaluation process that aspires to effectively serve and attract new users. Specifically Orion is paying special attention to user needs and behaviour at this institution. The project aimed to evaluate the usability of Orion, specifying whether or not the programme improves the IL skills of students, by providing content and functionality excellence. Additionally, it is very important to measure the usability of the structure that the programme follows.

The method applied was measuring Effectiveness, Efficiency, Learnability and Satisfaction (Jeng, 2005). Time estimation concerning completion of tasks, confidence, satisfaction and interest of users when performing a task on Orion, were some of the measured and evaluated factors. The study involved completion of a scavenger hunt style set of tasks, observation of participant behaviour and completion of usability questionnaires. User observation while implementing the tasks provided answers regarding the interface facilities of the information literacy programme.

Overall, Orion was received positively by all students as they felt it was easy to use. There have also been users who experienced difficulties with the structure of Orion. For instance, the average percentage of correctly completed tasks reached 64%. Most users appeared to be positively inclined towards the service, but during task performance and as they became more acquainted with the system, they became more critical as they confront difficulties, such as the terminology used in it.

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**Keywords**: information literacy, information literacy programmes, Orion, evaluation, accessibility, usability, web, information systems, digital literacy, media literacy, system evaluation, effectiveness

## "Ignorance of the Law is No Excuse": Legal Literacy as an Essential Ingredient of Sustainable Development in a Knowledge-based Society

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In virtually all legal regimes, responsibility for knowing the law is put squarely on the citizen. Thus, it is generally not an excuse to say: "I did not know there was a law about...". There is the legal fiction that imputes knowledge of the law on all citizens, indeed to all entities within a jurisdiction, whether citizen or not. This presumption is quite remarkable considering that lawyers spend several years studying law, and even then the vast majority of their working life is spent figuring out what the law is and fighting over legal interpretation. This paper examines the viability of the "personal responsibility for knowing the law" assumption in the context of the general society's expectation of citizen participation in the democratic process.

A central thesis in the paper is that while the imputation of legal knowledge on citizens is a legal fiction, legal literacy is a critical tool in the arsenal of any citizen who hopes to successfully navigate within a knowledge-based society, even more so if the individual wishes to contribute to that society. Three example areas are examined to illustrate the importance of legal literacy at the individual and societal levels. At the individual level, we examine the role of legal literacy as a tool of citizen empowerment in enhancing an individual's capacity to advance and protect oneself. At the societal level, we examine the centrality of legal literacy as a catalyst for sustainable social, economic, and legal development, especially in the context of community empowerment in a knowledge-based society.

Two main issues emerge as the cornerstones of our discussion of legal literacy: access and comprehension. For the imputed knowledge fiction to have any meaning, at a minimum, citizens need to have access to legal information. We examine here the existing legal structures for the dissemination of legal information at both government and civil society levels. However, even where legal information can be accessed, it has to understood and evaluated for relevancy and usefulness. This other requirement is complicated by the fact that not everyone can or should become a lawyer to understand the law. Indeed, as we mentioned above, not all lawyers understand a given law in the same way. It would thus be absurd to expect legal expertise from a non-legally-trained citizen. Given this reality, we examine the options (both available and proposed) that can be used to tackle the problem.

The paper will use several examples from both developed and developing countries to demonstrate how different societies are trying to tackle the problems presented by the legal knowledge imputation on citizens, especially on the twin problems of access to, and understanding of, legal information. These examples will include the publishing of judicial opinions as well as legislative output and the emergence of civil society groups such as community paralegals.

**Keywords**: legal literacy, citizen empowerment, community empowerment, legal information access, knowledge-based society, democracy, citizenship, sustainability

## **DETERMINING THE VALUE OF INFORMATION LITERACY FOR EMPLOYERS**

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### **OBJECTIVES**

The paper will report on a project aimed at answering the question of what benefits employers derive from recruiting, retaining and developing staff who are information literate. Thus it will develop a methodology for allowing the identification of quantitative and qualitative data that demonstrate the benefits of developing information literacy in workplace settings and assess the return on investment (ROI) of such initiatives. The project, due to be completed in June 2015, will propose, in terms that enterprises can understand and relate to, a way of identifying, or at least estimating the value that is added by information literacy; in other words, the value that is added by employing and training individuals who have appropriate and relevant know-how, competencies and skills in the use and handling of information and data, whatever form that takes. The value might be financial, but it might also relate to other factors that are important to enterprises, such as enhanced efficiency or competitive advantage. There is a need for greater evidence of the impact of IL if business and public agencies are to be convinced of the relevance and significance of IL; this project will help to address such need.

## Methodology

The study will be founded on case studies with three employers, in the public, commercial and not-for-profit sectors. Through a series of interviews, it will draw from the experiences and perceptions of individuals who occupy relevant roles within these organisations, for instance human resources/personnel managers, recruitment managers, business/policy strategists, finance managers and trade union representatives. The interviews will be complemented by (i) a consideration of recent literature on IL in the context of employment; (ii) a review of the three organisationse on IL in the context of employment; (ii) a review of the relevant literature, particularly relating to staff and professional development, governing the sectors in which the three organisations operate.

### OUTCOMES

The principal output will be a tool that expresses a methodology for identifying the data set out in the objectives. The tool, conceivably in the form of a map or schema of variables, will be practical and presented in a way that users (employers or any stakeholder with an interest in IL in employment settings) can easily understand and use. It would be used not only to demonstrate how IL adds value for enterprises, but could also help develop the evidence base on the benefits of IL in the workplace, thereby demonstrating to a range of relevant stakeholders that IL is an important contributor to the capacity of enterprises to thrive and innovate. Importantly, the tool may also help to raise awareness of any relationship between the benefits accruing from IL in the workplace and those that stem from fostering digital inclusion. The tool and the underlying methodology would be a proof of concept, and would represent a first step in the elaboration of a more comprehensive approach/product that necessarily has to be understandable to employers and others.

Keywords: information literacy, employment, workplace, value, return on investment

# Using Citation Analysis to Develop Information Literacy Course for PhD Students

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Many researchers have used citation analysis for various reasons. Most commonly it has been used to study the productivity of authors, to determine the most frequently used sources in academic library collections, and the distribution of the literature in a given subject.

The authors of this study presuppose that citation analysis can be used for developing an Information Literacy course. It must be asserted that dissertations reflect the doctoral student communication process and analysis could help to identify the basic features of the communication process in different research themes, and as another way to find the most appropriate way to communicate with doctoral students in each research theme.

As a matter of fact, the development of an Information Literacy course in academic libraries most often faces the problem of selecting cases for different research classification such us Humanities, Social Sciences, Natural Sciences, Biomedical Sciences, Technological Sciences.

The authors of this study have implemented a citation analysis study of doctoral dissertations, which were defended at Vilnius University during 2014. Six doctor dissertations from each of the five research themes: Humanities, Social Sciences, Natural Sciences, Biomedical Sciences, and Technological Sciences, were randomly selected for a total of 30 dissertations. Reference lists from these doctoral dissertations were used to identify the types of information sources cited. Microsoft Excel worksheets were used for data entry of the citations from all dissertations. One worksheet was used for each dissertation. Sources cited were categorized as peer reviewed articles, eBooks or its chapters, printed books or its chapters, studies and reports, conference proceedings, newspapers and journals, websites, thesis and dissertations. The journal and book title, language, availability in the library catalog and subscribed databases and journals and books coherence to Open Access of each cited source were recorded. The Statistical Package for the Social Sciences (SPSS) will be used to compute relationships between the most frequently cited information source types among research themes using Spearman's rank order correlation coefficient (q), Independent-samples T-test for comparison of the means between two unrelated samples, and Paired-samples T-test for the measuring of the difference between subscales in statistically meaningful means.

This study uses citation analysis as a tool to implement evidence based selection of the most appropriate information sources types as examples for different research themes. The study will reveal what type of information sources are the most cited in each research theme. Researchers presuppose there will be no significant difference in using information sources types among Humanities and Social Sciences and between Technological Sciences, Biomedical Sciences and Natural Sciences, but there will be a strong difference vice versa.

The usefulness and limitations of these statistics are discussed in relation to decision-making in creating Information Literacy courses. This study conducts a case study to demonstrate how Information Literacy educators could apply the model to formulate objectives and content for their courses for PhD students from different research themes.

Since it is based on scholarly activity, citation analysis is an Information Literacy course development method that could be used in all academic libraries.

Keywords: information literacy courses, citation analysis, doctoral dissertation

# **GOVERNMENT INFORMATION: LITERACIES, BEHAVIORS AND PRACTICES**

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Increasingly there is a convergence of civic and digital literacies as governments of liberal democracies harness the ubiquity of the Internet to facilitate participatory democracy. Open government (access to government information) and e-government (transactional and interactive services) hold out the promise of enhanced transparency, accountability and government collaboration (Meijer, Curtin, & Hillebrandt, 2012). Underpinning this rhetoric and practices is the assumption that citizens have two interdependent literacies: civic and digital. The first is the knowledge, ability and capacity that enables them to make sense of their political world and to act effectively as members of their communities (Milner, 2002). The second is multifaceted and closely aligned with information literacy (Limberg, Sundin, & Talja, 2013) and includes the capacity to find and retrieve digital information (Bawden, 2001).

#### **OBJECTIVES**

This paper focusses on the concept of openness as a default position, using information technologies to disseminate government information (McMillan, 2013) so citizens may evaluate government transparency and accountability and to make informed choices concerning democratic processes. Through an investigation of access to documents of a government inquiry, it aims to explore the factors that lead to 1) the frustration of citizens' expectations of technologically enabled accessibility to government information, and 2) a hindrance to e-democracy implicit in open government and its required literacies.

#### Methodology

The study draws on Bordieusian field theory to identify the actors, their roles and capacities and decision processes and mechanisms in making government documents available. The data collection is an online information audit through which the study examines the rules (*illusio*) by which the actors in a specific government department carry out their roles, make decisions and exert power. From a perspective of civic and digital literacies, the study investigates the points at which institutional mechanisms support or diminish access to a set of high profile government documents.

### OUTCOMES

The study shows that while individual behaviours and levels of civic and digital literacies may be high, in general, societal access is not and inability to find documents leads to the paradoxical consequence of lack of trust rather than government transparency and openness. Among the implications of the findings are, that while these literacies are an important part of the infrastructure of access, open government policies can be compromised by technology-driven vulnerabilities, political decisions and inadequate communication of infrastructure support, particularly those legislated practices of agencies' collection and preservation policies to facilitate government information accessibility and subsequent civic literacy.

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Keywords: civic literacy, digital literacy, government information, public sector information, open government, field analysis

## THE AURA PROJECT: AN INSTITUTIONAL Approach for Developing Critical Thinking, Independent Researchers

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"Wicked" problems (Ramalingam, Laric & Primrose 2014) are by nature complex and cannot be solved through a simple linear approach. Creating learning environments where students can develop their information literacy, critical thinking and the ability to, independently, conduct research is not a simple problem. It is generally accepted that isolated information literacy interventions have some impact but may be limited by a number of factors. For example, learning may not be sufficiently embedded in real world problems; activities may be insufficiently rewarded or recognized at an institutional level; there may be a lack of engagement of faculty staff etc. As a consequence we would argue that cultivating information literacy in higher education needs to be approached holistically and systemically.

This paper describes the African Universities Research Approaches programme (AURA) that has taken a holistic/systemic approach. A strategy has been developed, and is currently being implemented, that sees information literacy as embodied in a culture and, in higher education, needs to be approached from an institutional perspective as well as an individual perspective.

To achieve this, a study was conducted with three universities where staff (faculty, support staff and senior personnel) took part in interviews and focus groups (Hepworth & Duvigneau 2012). These explored the desire for independent, information literate, critical thinking learners and how the environment would need to change to help foster such learners. It was found to be complex. To develop learning contexts where students could be engaged with meaningful research faculty's own research capacity, including their information literacy, needed strengthening. Furthermore to enable them to create stimulating learning contexts where the student researcher could develop their pedagogic knowledge needed strengthening.

UKAid agreed to sponsor an initiative, lasting three and half years, that would develop and evaluate a teaching and learning framework that would achieve these objectives. The first six months involved working with four organisations Muhimbili University in Dar Es Salaam, Tanzania; Makarere University in Uganda, Strathmore University and Kenyatta University, both in Kenya, to help understand their context, identify their needs and engage with key stakeholders i.e. librarians, ICT staff, faculty and senior staff. This led to the design of research and pedagogic capacity interventions which were developed collaboratively. Approaches were also identified to help ensure this could become institutionalised, for example, incorporating the training in the professional development of all new staff and, via the graduate schools ensuring that this became part of the training for PhD researchers. Furthermore, staff and the AURA team explored how elements of the training could be incorporated into Masters' and undergraduates' core curriculum. An institutional strategy will therefore develop that could be applied in other institutions. This will be facilitated by making the AURA experience and the learning resources open to all.

This paper will provide background on how the current strategy has evolved, the challenges that have been experienced, and outline of the capacity strengthening interventions that will help to develop research and teaching capacity as well as critical thinking, information literate independent learners.

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Keywords: information literacy, research capacity, institutional strategy

## PRISMATIC REALITIES: MULTIDISCIPLINARY AND INTERDISCIPLINARY CULTURES AND IMPLICATIONS FOR INFORMATION LITERACY IN VISUAL STUDIES; THE CASE OF HISTORY OF PHOTOGRAPHY

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The need to understand disciplinary formations is imperative for students, trying to navigate research literature, especially in visual studies. History of photography is in ferment, protean, and capable of using the historical image as explanatory lens, posing challenges for students navigating the scholarly literature, with implications for information literacy and scholarly communication. How is history of photography constructed, or mediated via different disciplinary perspectives? Within the domain of visual studies, how best to introduce students in comprehending disciplinary cultures that animate history of photography is imperative if they are to successfully appreciate the complexity of and how disciplines appropriate and influence scholarly communication in history of photography with the wider scope of visual studies and literacy. Too often the first recourse is fine arts literature and not the richly layered literature appearing in other disciplines—therefore this mode, diagrammatic, and graphical presentation is proposed to inform their information needs and strategies. Deploying a definitional conceptual model of disciplinary culture and disciplinary formation informing information literacy, this illustrative presentation can be applicable to other humanities disciplinary instruction.

A conceptual and definitional model of disciplinary formation will animate analysis of information gathered from specific databases crossing a number of disciplinary formations and informed by substantive historiographical analysis of disciplinary formation. Discussion will frame disciplinary characteristics of history of photography within visual literacy/studies, exploring intellectual structure within scholarly communication. It will include other disciplinary influences within the contextualized nature of disciplinary cultures, since the field is multidisciplinary and interdisciplinary. Characteristics can be identified for disciplinary alignments, e.g. anthropology geography, history, sociology, as well as art historical, literary, or philosophical fields, etc. sub-disciplinary formations as visual anthropology or visual sociology. Diagrammatic and graphical illustrations will elucidate visual studies/literacy via history of photography, helping students understand the nature of the aesthetic frame through which photography may be analyzed is transcended or complemented, via other disciplinary influences, further sensitizing students to disciplinary cultures. Additionally, the flagship journal *History of Photography* will serve as an intellectual frame for analysis of other journals not identified with photography revealing heretofore innovative research crossing many disciplinary influences, highlighting the need for awareness of disciplinary differences for visual literacy.

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Keywords: disciplines, history of photography, interdisciplinary, multidisciplinary, visual literacy/studies

# **EVERYDAY HEALTH INFORMATION LITERACY IN COUNSELLING ON HEALTHY EATING. THE CASE OF PREVMETSYN**

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## Introduction and Aim of the Study

The use of a screening tool for assessing everyday information literacy (EHIL) is examined in counselling on healthy eating and lifestyle in the medical intervention study Improved Methods of Lifestyle Modification for Patients at High Risk for Metabolic Syndrome (PrevMetSyn) ongoing in Finland from 2013 to 2016. Metabolic syndrome was defined as high body mass index (27-35 kg/m2) and at least two of the following: high fasting glucose, high triglycerides, low HDL cholesterol or high blood pressure. Healthy eating and lifestyle are means to manage these health risks and prevent associated chronic diseases, such as type 2 diabetes. The tool shows an individual's EHIL on three dimensions: 1) motivation, 2) self-confidence to access information, and 3) perception of the ability to assess the quality of health information (Niemelä et al., 2012).

## Methodology

A case study and quantitative methods are used. A randomised controlled intervention trial (based on a population-based sample of 560 subjects from 20 to 60 years) was utilized on two-phases: the study subjects were randomized into three groups: 1) intensive face-to-face counselling, 2) low-intensive face-to-face counselling, and 3) a control group, and further into users or non-users of a web-based ICT-programme. Each of the six randomised groups included approx. 100 subjects. All study subjects' EHIL was screened at the beginning of the intervention study. The analysis focused on the distributions of the EHIL scores. The EHIL counselling design was based particularly on examination of the intensive counselling groups' EHIL scores.

### **Results and Conclusion**

The study subjects' EHIL varied in its three dimensions, the weakest of them being the perceived ability to assess the quality of health information. This result was applied for targeting counselling on informational aspects of health behavior during one 90-minute visit as follows: Getting familiar with the concept of EHIL and the screening tool, learning about health information sources, assessment of their quality, the Internet as a source of health information, and concluding the visit along with homework.

The group counselling has potential to improve the study subjects' EHIL. The application of the EHIL tool together with cognitive behavioral therapy (Van Dorsten & Lindley, 2008) is a novel counselling approach.

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Keywords: health information literacy, screening, medical intervention study, nutrition, lifestyle

## SUPPORTING THE PROCESS: ADAPTING SEARCH SYSTEMS TO SEARCH STAGES

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Search engines have become indispensable tools for the information-related tasks performed by a wide variety of searchers across the globe. The information literacy (IL) of these search engine users varies widely. IL has been defined as the "ability to recognize when information is needed," and the "ability to locate, evaluate and use effectively the needed information" (ACRL 2000). Moreover, the complexity of tasks performed with search engines spans a continuum between simple tasks, such as lookup tasks, and complex tasks, involving learning and construction. The more complex tasks in this spectrum may consist of multiple stages (Kuhlthau 2004). As Kuhlthau indicates, each stage in the evolving task process may have a profound effect on searchers' feelings, thoughts, and actions. Kuhlthau's model has similarities with ILprocess models that provide guidance to learners and indicate steps required for successful problem solving (Eisenberg 2008). Kuhlthau has stated that her process approach has had a "considerable impact" on library and information science but "little impact" on the design of actual information retrieval systems (Kuhlthau 2004, 208). In this paper we discuss the potential impact of search stages on the desired functionality of search systems. In the first part of this paper, we take the perspective of IL by introducing relevant IL theory and various process models, including Kuhlthau's ISP (Information Search Process) model (Kuhlthau 2004) and the Big6 model (Eisenberg & Berkowitz 1990). We discuss the implications of these models for the search support of research-based tasks performed by non-expert searchers. In the second part of this paper, we take a system perspective, highlighting the defining elements and increasingly pivotal role of online search engines. We discuss the strengths and weaknesses of current search solutions in the light of the discussed process models, observing that while search engines' functionality and returned results may be highly relevant to a searcher's query, they are not necessarily relevant for the searcher's stage of search. This part concludes that current search engines make information searching appear simple, even though, as the new ACRL Framework for IL (ACRL, 2015) indicates, searching is a "contextualized, complex experience." In the third part of this paper, we explore novel ways to reconcile IL and system perspectives. We look at appropriate ways to perform task sharing between searcher and system (Beaulieu 2000), and introduce the concept of adaptive, stage-aware systems. In addition, we define the requirements for these systems, including the need to monitor the search process. Finally, we discuss the implications of the proposed approach. On the one hand, the positive effects of IL interventions (e.g. Walton and Hepworth 2010) suggest that increasing search support, for instance encouraging critical reflection on encountered materials, may have positive effects on task outcomes. On the other hand, potential drawbacks of multistage and prescriptive search systems include "lockstep strategies" (Eisenberg, 2008) and intrusive guidance. We complement the conceptual explorations in this paper with insights into the design and evaluation of concrete multistage interfaces in the context of general web search and online book search.

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Keywords: information search and retrieval, information literacy, information behavior, search stages

## **Smart and Sustainable Library: Information Literacy Hub of a New City**

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Paper presents a proposition for the new approach to the role of library in a sustainable city. Smart and sustainable library is depicted as a central public institution of a sustainable city. Several library services of the new generation based on user participation are proposed.

The concept of smart city has been evolving intensely since Internet of Things gained momentum as a major discourse in technology development (Albino, Berardi, & Dangelico, 2015). Emphasis is increasingly shifting from Internet based infrastructure of a city towards services that make the city sustainable (Höjer, & Wangel, 2015). The role of a library in such a new city has not been defined properly and this paper advocate for new generation of library services that are integrated with the city infrastructure and are using it to enhance information literacy across the city.

Paper presents an in-depth literary review on smart library concept (Min, 2012), (Younis, 2012) and offers a comparative insight into contemporary smart city and sustainable city literature (Komninos, 2014), (Neirotti, et al., 2014). Based on these findings a proposition is presented on new role of the library in a city that has changed and become smart and more sustainable. Information literacy is in the focus of new library services transforming the library into the information literacy hub where new technologies can be experimented with and new concepts related to technology grasped.

Technological, social and economic complexities of a smart and sustainable city lead to changing prerequisites for information literacy of its citizens. Reliance on ubiquitous technology in a sustainable city means that its citizens need to update their knowledge of technology use very frequently. Effective information literacy in a sustainable city emerge as a complex and changing framework with fragmented knowledge levels and skills needed for use of even the same technology in different use scenarios. Publicly funded library services are the natural venue that may alleviate the problem of constant need for updating of technology based know-how in everyday life situations by providing access to novel technologies and more importantly knowledge and skills for its use. Participatory library focusing its services on peer learning and in-group help in grasping first hand experiences of new technology use in specific urban development scenarios of a sustainable city may add significant value for its users and transform the library into the most praised public institution providing services that are sought for and supported.

Several kinds of library services of a new generation that build on infrastructure of a sustainable city are proposed. A sustainable library built around smart services is depicted. The claim is made that sustainable library is to be an integral part of a sustainable city making not just another useful urban addition providing for some of the various smart and sustainable services of the new city, but a central hub of information literacy that carter for constant upgrade of information literacy of its users as the central feature allowing for innovativeness and creativity of citizens of sustainable cities to come to the fore.

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Keywords: smart library, sustainable library, smart city, sustainable city, information literacy

## INFORMATION LITERACY AND THE SCOTTISH INDEPENDENCE Referendum (2014): An Autoethnographic Exploration of Political Decision-making

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This paper contributes to the growing literature on Information Literacy (IL), which addresses questions of the place of IL in Society and the limits of classic information search and retrieve models. It will do this by taking a major political decision and illuminating the implications for IL by applying the lens of autoethnographic research.

In this case the context is a major political decision regarding a proposed change in the constitutional settlement of the United Kingdom of Great Britain and Northern Ireland. The question facing voters was: "Should Scotland be an Independent Nation?" The Scottish referendum is widely regarded as a watershed in UK politics which can be viewed from multiple perspectives: as a single question referendum to determine the future of the present constitutional settlement of the UK; as a complex party political activity; as an example of the power of modern nationalism with resonances in several European nations; as a broadly based social movement for progressive change; as an interaction between corporate mass media and the social media. The political framework for the Referendum was an apparently simple division between a campaign to vote YES, the "YES Campaign", and an opposing campaign, the "Better Together Campaign". Both campaigns generated a variety of groups with differing positions on the question and approaches to campaigning.

The campaigning activity was large scale, highly inclusive and very politically charged, representing an example of unprecedented debate on the future of Scotland's relation to the UK. Consequently the demand for information about possible consequences was very great and included major categories such as: access to factual information; opportunity to engage with persuasive argument; exposure of misinformation; help to distil the amount of information into a reliable guide to voting; awareness of affective conditions e.g. information 'anxiety'; 'euphoria'.

Autoethnography enables the researcher to illuminate a social or cultural context, or provide insight into a specific problem, through reflexive self-observation, as an "insider". This research approach has not been applied to IL to any great degree. This paper therefore has value in introducing the methodology to a wider audience. One of the authors (Johnston) will demonstrate the method through his own engagements with the Referendum campaign as a citizen with a developed appreciation of IL

This paper will:

Briefly summarise the Referendum situation in sufficient detail to inform an international audience, who may have little factual knowledge of the UK constitution and the nature of the 2014 Referendum.

Using autoethnography, illuminate the information landscape of the Referendum in terms of: published media including books, pamphlets, leaflets; print journalism; websites; and public meetings. There will be a particular focus on this latter context given the significant role public meetings played and also given the relative lack of attention paid to this context in the literature of IL.

Reflect critically on this experience, in the light of: library/professional accounts of IL (e.g. CILIP), the affective and political dimensions of political campaigning, and the Webber and Johnston (2013) model of Lifelong Learning.

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Keywords: democracy, information literacy, autoethnography, citizenship

# SYSTEMIC DISTURBANCES IN THESIS PRODUCTION PROCESSES

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Since 2009, Finnish Universities of Applied Sciences (UASs) have published students' theses in the Theseus fulltext database. This database offers opportunities to explore information use patterns in theses accepted by Finnish UASs. Vague or insufficient references and plagiarism are examples of information use anomalies. They are often felt to be a result of problems with students concerning their information literacy skills and attitudes. This view of explaining the cause of weak citations and plagiarism isolates these problems from relevant systemic structures. Instead of focusing on students as the source, we aim at discussions concerning the systemic dynamics of these anomalies. Information use anomalies are symptoms of disturbances in systemic configurations in theses production. Our paper focuses on anomalies in information use and academic writing as part of current practices in theses production. Our main concerns are the quality and ethics of information use. Better understanding of the systemic dynamics would allow to create more active and critical positions in thesis cultures at Finnish UASs which might lead to new types of fruitful information literacy-related interventions.

In our analysis of anomalies in information use, we started with two notions based on systems typology: 1. Three types of systems are involved in preparing and finalizing a thesis in higher education: (a) the mechanistic system; (b) humanness as taking care of one's information environment; and (c) colonies formed by pairs of aforementioned system instances representing information use situations (Porra, 1996; Porra, 1999). 2. Any category contains two aspects, namely the definition (signifier) and instances (signifieds). Institutions of higher education are supposed to become more effective in the production of completed academic degrees. Here we detect a machine-like metaphor that supports the New Public Management ideology and its demands for higher effectiveness. The idea of higher education being a business venture calls for debate. Our analysis was based on triangulation of three systemic frameworks following Engeström's approach (2015): 1. The process is defined in a factitive system the qualification of theses and resource allocation based on both explicit legislation and several traditions. 2. The support system contains, for example, guidelines for thesis writing and library services. 3. The object system is focused on experiences of thesis writing as part of a student's unique lifespan. In the Finnish UAS context, only the student, teacher, and customer are seen as essential actors (Rissanen, 2003). Both the library and the Internet are reduced to passive resources. The setting creates mutual tensions if teachers trust in sources authorized by library collection politics while students emphasize easy access via the Internet.

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Keywords: bachelor theses, information use, references, plagiarism

## ARE WE THERE YET? TRENDS IN INFORMATION LITERACY PRACTICE IN CARIBBEAN LIBRARIES

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The role and impact of information literacy (IL) within higher education institutions globally have seen significant changes over the last five years. This is partly demonstrated in the changing face of and emerging trends in one of the most utilised IL instruction tools, the online tutorial. Trends include the move from a mere supporting role to being foundational and integral, the increasing use of plagiarism tutorials for more than academic integrity to addressing and enabling values and social responsibility, and, from teaching comprehensive research strategies to becoming an important point-of-need tool for different aspects of IL education. The IL online tutorial reflects widespread and emergent trends in IL education.

Are these widespread trends reflected in IL practices in Caribbean libraries? While IL instruction in the Caribbean is evolving, what are the current distinctive practices? What are issues in Caribbean libraries that may not allow for the adoption of trends seen outside the region? Cumberbatch, speaking of the Caribbean, notes that there are indeed "differences in how IL skills are facilitated." How then are libraries in the Caribbean shaping IL programmes?

My research adopts a comparative qualitative approach and highlights select findings of a project on IL education in U.S. academic libraries. While the research is aimed at identifying teaching-learning outcomes in online tutorials in these libraries, my analysis enabled the emergence of multiple themes in IL education. These include innovative pedagogical approaches including reflective learning and team-based learning (Jacobson, 2011; Hosier, 2013), design approaches including use of multiple web tools (Armstrong and Georgas, 2006, Massis, 2011), and points to what may be seen as key directions in IL practice.

I juxtapose these key directions identified in U.S. libraries with current initiatives in IL education in select libraries in the Englishspeaking Caribbean. The findings indicate that, while IL in Caribbean libraries exhibit emerging trends as seen in libraries outside the region, there has not been wholesale adoption of these practices especially in relation to the use of the online tutorial. However, these libraries have combined both traditional and innovative strategies to meet the needs of their environments. In my paper I also discuss complexities in Caribbean environments as well as the varied approaches to IL education.

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Keywords: information literacy, Caribbean libraries, online tutorial, academic libraries

# INFORMATION LITERACY FOR VISUALLY Impaired Teachers (VITs)

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### Purpose

There are more than 285 million blind and visually impaired people (VIPs) in the world, 90 percent of whom live in developing countries<sup>3</sup>. The purpose of our paper is to present the findings of a study on Visually Impaired Teachers (VITs) of Blind Schools in Pakistan to examine how they identify, explore, select, organize, create, present, assess, and apply information (IFLA's Information Literacy Empowering Eight model) in teaching and everyday life.

#### Methodology

We discuss the findings of a small-scale population (visually impaired teachers of blind schools) for their compliance to IFLA's Information Literacy skills set. We conducted interviews in January 2015 with 55 VITs belonging to ten blind schools located in the province of Khyber Pakhtunkhwa, Pakistan. We based our interview questions on IFLA's E8 Information Literacy Model. We also explored their ability to find, evaluate, and apply pedagogical information.

### Findings

Results of this study exhibit multifarious findings on the different aspects of IL skills of the VITs. Although basic skills of the studied population have been assessed, we found that VITs were highly skilled in terms of "organizing the information" and they preferred to take personal responsibility while searching for required information. We found that the VITs were less skilled in using and apply new tools for information searching and lacked the skill to present the data effectively. Our results revealed that information literacy skills are equally important for VITs because they play an important role in gathering, organizing, and disseminating information to their respective special audience members who cannot read printed resources in today's information society.

### ORIGINALITY/VALUE:

This is the first research on the information literacy skills of Visually Impaired Teachers (VITs) in Pakistan. Our results will be useful for planners and experts who may integrate IFLA's E8 model into several courses taught at the Blind Schools in order to enable the deprived community enhance their information literacy skills.

Keywords: information literacy for blinds, visual impairment and information literacy, IFLA E8 for Blinds

<sup>3</sup> World Intellectual Property Organization (WIPO) http://www.wipo.int/dc2013/en/about.html

# **DIGITAL INFORMATION LITERACY: A CASE STUDY IN OSLO PUBLIC LIBRARY**

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## **OBJECTIVES AND VALUES**

The purpose of our study was to examine the digital information literacy of the library professionals in the Oslo Public Library and explore the ways to improve their skills as well as barriers to improvement. The competence level of public library users in the use of technology is not always high and therefore it can be difficult for them to identify appropriate information in a digital platform. Digital information literacy is a subset of information literacy. For the purpose of this study, we have defined the term, digital information literacy, as an ability to access, evaluate, use, manage, communicate, and share digital information and sources in an effective and efficient way. We identified no study that addressed the issues of digital information literacy of public library professionals in Norway. Therefore, it was important to identify the practice for developing digital information literacy support services.

#### **Methodology and Outcomes**

We conducted the study at the Oslo Public Library. We used a qualitative approach to get valuable insights from the library professionals. We chose the case study method and conducted semi-structured face-to-face interviews. We used a non-probability method to include the most important characteristics of the informants in the study and selected the participating public library's branches to represent diversity among their potential users. Due to saturation of information, we interviewed twenty library professionals. To keep a balance between native and immigrant dense locality, branches were included that reflected varying demographics among their user populations. We used narrative and discourse analysis for data analysis.

The findings revealed that there were significant differences in the level of digital information literacy of the public library professionals. Their learning experiences were different depending on their age and association with information technology. We identified the knowledge sharing approach among the staffs. The slow adaptations of technology, organizational, personal, and technological barriers were hindering the digital information literacy development. Online training modules for digital information literacy, mapping the staff competencies, assessment of the staff needs, advanced and customized training programs, and long-term strategies are needed to raise the level of the digital information literacy of the public library professionals.

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Keywords: information literacy, digital information literacy, public library, Oslo public library, Deichmanske bibliotek

# **E-Reading and Digital Literacy in Higher Education. Part One: The State of Affairs in Hungary**

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Information literacy means the application of various technologies in a manner that lends an intellectual framework to recognition, understanding, critical thinking and evaluation of digital contents. One of the developments that the technogenesis (the idea that humans and technics are coevolving – by K. Hayles) taking place in our days facilitates is the appearance of digital literature. It is in the best interest of every European nation to make its cultural heritage available in digital form on the web. Besides the main representatives of Hungarian digital culture (MEK, DIA, NAVA), other initiatives have developed in Hungary. The constantly expanding content of the major Hungarian literary databases makes free access to digital contents possible for all.

However, the technogenesis we are witnessing also poses questions as digital literature is not only contents after all. First and foremost, digital literacy is a basic requirement to handle (download, convert, move, etc) digital content, literary or otherwise. But, techogenesis, as Nicholas Carr argues, imperils our ability to concentrate, which leads to superficial thought, diminished capacity to understand complex text, and a general decline in intellectual capacity as well as in computational thinking. It must be also taken into consideration that the unlimited accessibility of digital literary contents provides a literary experience which is different from what it is in printed form. The digital immigrant, who teaches literature and the digital native who studies literature diverge not only with regard to information literacy, but also as far as the cognitive processes of reception, critical interpretation, and computer problem solving in general are concerned.

Hyper-attention impacts the cognitive processes negatively in the bit-generations, as it effectively pushes deep attention in the background, although deep attention would be indispensable to the processes of reading, comprehension and learning. Hyper-attention is one factor which is responsible for the digital divide since the e-devices not only convey literature here, but they also tempt attention in many more directions, thus maintaining hyper-attention.

Another issue is how the different generations can use and actually do use what literary databases offer. The wide choice of the major Hungarian databases makes it possible to show the content on practically any device. In this sense, digital literacy is indeed indispensable. Allan Martin proposes that digital literacy is a unity of consciousness, inclinations and capabilities that let us use digital devices and institutions appropriately to identify, access, handle, integrate, evaluate, and synthesize digital sources.

(1) How sophisticated is the digital literacy of the generation of digital-immigrant teachers? Does their knowledge make them capable of accessing electronic literature, using it in relevant format and passing it on to their students? (2) What is the extent to which the digital literacy of the digital native differs from that of their teachers? Where does the digital divide lie? Is there a divide at all? (3) How do university students relate to e-book readers? Do they use them intelligently or are they simply book-hamsters?

The works of Hayles, Carr, Thomas, Van der Weel, and Wing are used as theoretical background. We hope that answers to these questions will be provided by the empirical research conducted among relevant first-year students of the University of Debrecen.

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Keywords: electronic literature, digital libraries, hyperattention, computational thinking

## Perception of Information Literacy among Faculty at the University of Graz, Tallinn University and University of Zagreb

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The paper reports the results of a study that was designed to explore how information literacy (IL) was perceived by university teachers and managers at three universities in Europe: Graz University (Austria), Tallinn University (Estonia) and University of Zagreb (Croatia). Academics and managers from different disciplinary fields were involved in this study: at Graz University from business administration and management, at Tallinn University from information science, and at University of Zagreb from information system development and informatics.

Information literacy is one of the most important skills for academic success. Librarians and university teachers are important factors for achieving and promoting IL of students in higher education.. Librarianship is a profession initially linked to IL and IL education through traditional programs of library users education. However, the tendency of IL as a part of the curriculum (so-called integrated IL education) and/or curriculum designs where students have ongoing interaction and reflection with information (so-called embedded approach to IL education), gives university teachers an increasingly important role. University teachers become and are important actors for improving IL of students. At the same time they should themselves provide examples of good practices in IL, but IL education should not depend on individual, personal efforts of individuals. Information literacy education (and its positive consequences and contributions) will not be effective and successful as expected and possible without recognition, valuation and support on higher organizational, institutional levels. Institutionalizing IL education, i.e., building a strategy of IL education and building an institutional strategy based on IL education largely depends on university management.

The way university teachers and university management perceive, promote and practice IL becomes a topic of great importance to the IL education. A semi-structured interview was used as a method for collecting data on the perception of IL among university teachers and management at three higher education institutions involved in this research. Perception of IL basically relates to attitudes of university teachers and management towards IL, i.e., the value and importance of information literacy as declared by faculty. In this sense, the perception of IL is on the attitude level (declarative) but it should be also on the level of behavior/conduct/practice. Teachers valuing and practicing IL in their courses are very strong channels of education in IL, passing/transferring their attitudes and behavior patterns to students. In this broad sense of perception of IL the following aspects were explored: a) foreknowledge of IL (e.g. how they define IL, through which skills/abilities), b) their attitudes towards IL (importance for education, professional development and lifelong learning), c) motivation for IL facilitation (motivation for incorporating/facilitating IL in their courses and involving students in it), d) IL practices in courses they teach and e) IL skills/ abilities and requirements expected from their students.

The outcomes of the research are suggestions that would likely lead to enhanced perception of information literacy importance and to improved information literacy education at the university level in general, and at three different higher education institutions in Europe in particular.

Keywords: information literacy, perception, higher education, faculty, management, Europe

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Books, articles and other publications can nowadays be obtained both in printed and electronic format. Electronic publications are easy to deliver, but readers have their own preferences and according to previous studies different ways to read suit best different purposes.

#### OBJECTIVE

The purpose of this paper is to investigate Finnish university students' format preferences for class readings, electronic or print. The study is part of a multi-national research project, the survey instrument of which has been prepared by PhD Diane Mizrachi from University of California, Los Angeles. The survey includes questions concerning convenience of reading course materials electronically or in print, students' preferences to print out digital course readings, and e.g. in which format it is easier to focus.

#### Methods

The questionnaire was sent to 18 Finnish university libraries that were asked to forward it to their students in March 2015. The questionnaire was opened 1535 times. 672 questionnaires have been completed, but the number of answers concerning each question, however, varies. The data have been analysed statistically with IBM SPSS Statistics Data Editor, and the free comments have been studied qualitatively.

#### OUTCOMES

According to the preliminary results, informants represent a rich variety of major subjects: various fields of social and political sciences (43 %), medical and pharmaceutical sciences (21 %), sciences (12 %), humanities (10 %), engineering (14 %) and other. 71 % of informants were women and 29 % men. The possibility to comment the topics of the questions was used actively and some questions received more than a hundred comments.

78 % of the informants can focus on a material better when they read it in print (8 % disagreed, 14 % were neutral). Free comments stated that focusing depends on topic, and when reading on-line, the informant would get lost in the Web. 69 % of informants remember information best when reading it in print. A bigger proportion of women (74 %) agreed with this than of men (56 %). 45 % of informants wanted to have all their course materials in print format, and over half of representatives of social sciences (53 %) and humanities (52 %) agreed with this statement. Only 17 % of informants (13 % of women, 26 % of men) agreed with the statement that reading in electronic format is more convenient than in print. An exception to this were informants representing engineering of whom 29 % agreed with this statement. 54 % of informants preferred to print out their course readings than to read them electronically. In free comments printing depended on the lengths of texts, was not considered ecological, informants tried to avoid extra printing, and wanted to save paper.

On the basis of the preliminary results, printed class readings were preferred by the majority of informants, especially if the texts were long. However, only less than half of the informants would want all course materials in print format. Often there are ecological causes in the background, and there is also the minority preferring electronic format, especially engineers.

Keywords: reading preferences, e-publications, university students

# **COPYRIGHT LITERACY IN FINNISH LIBRARIES, ARCHIVES AND MUSEUMS**

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#### INTRODUCTION

Copyright literacy can be defined as the ability to identify copyright-protected materials, navigate fair use and fair dealing, obtain permissions and licenses where necessary, and recognize infringement of copyright law (Harris 2015) but also to recognize respective information needs. In cultural institutions enabling public access to works of various authors and artists, copyright literature is a relevant part of professional expertise. According Todorova's & al. study (2015) LIS professionals' awareness about copyright topics is not satisfactory; but their majority is in favor of including copyright related issues in LIS education. The importance of copyright knowledge is emphasized by its inclusion into students' library and information literacy education organized by libraries (Information Literacy 2015; Cheng & Winter 2014, McKinnon & Helge 2014). The purpose of this paper is to study the copyright literacy in Finnish libraries, museums and archives. It is part of a multi-national research, the survey instrument of which has been prepared by Dr. Tania Todorova, State University of Library Studies and Information Technologies, Bulgaria. It includes questions concerning familiarity with copyright law.

#### **Research Material, Methods and Results**

The questionnaire was sent to 71 Finnish scientific and special libraries, nine national and regional archives, 66 museums, to the ministry of education and culture, and to 20 regional libraries that were asked to forward it to municipal libraries. It could be answered between November the 25<sup>th</sup> and December the 15<sup>th</sup>, 2014. 274 responses were received, two thirds of which were completely filled-and the number of answers varies from 156 upwards. Nevertheless, the results illuminate awareness and interests concerning copyright regulations. The data was analyzed statistically with IBM SPSS Statistics Data Editor.

68% of responses came from different kinds of libraries, 21% from museums, 6% from archives and 5% from other institutions. National copyright law and institutions are moderately well known by respondents, whereas respective international organizations are less known, which is in accordance with previous research. In libraries there is familiarity with open access, open data and for example open educational resources; but these topics were not equally familiar in museums and archives: The familiarity with copyright issues varied, depending on the domain the respondent's institution represented. Least familiar topics were clearing rights and fair use. Most informants support the application of copyright legislation, and the worldwide harmonization of exceptions to it in libraries and other cultural heritage institutions. The favorite sources of more copyright information were colleagues and web sites, but only a few would consult blogs and wikis. 83% of respondents support the inclusion of copyright issues in education. In continuing education the application of copyright regulations was desired in several responses.

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Keywords: copyright related literacy, libraries, copyright regulations

## Understanding the Field of Critical Information Literacy: A Descriptive Analysis of Scientific Articles

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#### **OBJECTIVES AND VALUE**

The importance of critical perspectives in information literacy (IL) has been recognized by a number of authors in the field (for example, Elmborg, 2006). The objective of this paper is to describe the field of critical information literacy (CIL) based on previously acknowledged categories for literature analysis in the field of library and information sciences (LIS) (Aharony, 2010; Aharony, 2011; Tuomaala, Järvelin, Vakkari, 2014). Since there has not been any comprehensive account on qualities of the published literature, such a literature analysis is necessary to understand the accumulated empirical, theoretical and practical insights of CIL in a more complete way. Because no similar research is available in the CIL subfield, subject categories cannot be deduced by looking at an existing theory or model. This fact makes this research valuable also as an initial examination to prepare the data to carry out an inductive content analysis of articles in the CIL field. This research is limited to the already established and applicable categories deduced from similar studies in the wider field of LIS and IL. The inductive approach presupposes a bibliometrical organization of data, but the qualities explored in this part of our research project also allow the contextualization and cross-examination of recognized conceptual and thematic distributions.

#### Methodology

The sample was created by conducting a thorough year by year search of the Google Scholar database which was analyzed using the open source software "Publish or perish". For this database, the search phrase "critical information literacy" was used to detect articles directly mentioning the concept in any textual search field. Spanning the years 1997 to 2014, the database recognized 627 entries which will be further treated to eliminate duplicate entries and distinguish scientific articles from other types of works that mention the concept. Google Scholar was chosen after conducting similar database searches for the examined period in SCOPUS (169 article entries), WOS (9 article entries) and LISTA (21 article entries). It is our conclusion that Google Scholar can best ensure a comprehensive account of the literature qualities as well as give the most complete temporal overview. A quantitative (statistical) and qualitative (content) descriptive analyses of abstracts and keywords (and full-text where available) will be undertaken to attribute appropriate qualities to the articles based on the established categories in the LIS field.

### **EXPECTED OUTCOMES**

Authors will present the established authorship and publication patterns that show who are the most important authors, the type of contributions and the subject areas they come from. Outlined research patterns show how and what kinds of research has been done in the CIL field. The authors will introduce key analyses where there is a lack of practice-oriented contributions as well as preliminary findings of thematic prevalence in CIL. A literature analysis of this kind allows researchers to understand the knowledge gained from critical approaches to IL and informs them on further steps research and practice can take from this point forward.

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Keywords: critical information literacy, qualitative, quantitative, literature analysis, scientific articles

## THE PARTICIPATORY MEDICINE ATTITUDES OF GENERAL PRACTITIONERS IN GREECE: AN INFORMATION BEHAVIOUR PERSPECTIVE

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Although general practitioners (GPs) are familiar with more than 400 distinct clinical conditions (Andrews et al 2005) it is very difficult for them to be up-to-date in all different medical specialties and they constantly interact with an expanding medical information space. GPs are also expected to be closely related to their patients' communities, creating a participatory and shared decision-making environment (Coulter & Collins 2011). In this paper, we explore the relationship between GPs' information seeking behaviour and their perceptions for participatory medicine (PM). PM has attracted a lot of attention in health-related research but mainly with an emphasis on patients. However, PM implies a shared decision-making context where both doctor and patient reach a healthcare choice together. Very few studies in healthcare focus on GPs in relation to their attitudes towards PM and their role in patient guidance to suitable information resources. We conducted our research by means of a questionnaire informed by Wilson's (1999) model of information behavior, using a five-point Likert scale to rate the importance of information needs, the utilization of information sources, the importance of information seeking obstacles and GPs' attitudes towards PM practices. We approached, through emails, a total of 664 GPs in Greece, registered with the Hellenic Society of General Practitioners. One hundred and seventy-six GPs returned the questionnaire (26 percent response rate). We performed statistical analyses using SPSS-based descriptive and nonparametric inferential statistics and associations (Mann-Whitney-U and Kruskal-Wallis-H and Spearman's rho test). The questionnaire had an overall Cronbach alpha of 0.824. The most important information needs of GPs were for "treatment", "diagnosis", and "drugs". The Internet was the most frequently utilized source while "lack of time" and "cost" were the most significant information seeking barriers. GPs expressed a positive attitude towards PM practices without encountering information overload or technological barriers when utilising online information sources. We also found significant correlations between doctors' frequency of information seeking for updating their knowledge and the importance they assigned to evidence surrounding their communication of diagnosis information to their patients. Keeping up-to-date, via frequent online information seeking, is an essential condition for evidence-based PM practices. Future research could explore the impact of doctors' digital and information literacy on PM practices for specific health information needs and on a range of online information sources.

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Keywords: general practitioners, information seeking behavior, information needs, participatory medicine, Greece

# IT IN SMALL CZECH SCHOOLS AND THE DEVELOPMENT OF TEACHERS' COMPETENCES

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The aim of this paper is to describe the use of information technologies by teachers in small primary and secondary schools in the Czech Republic. These findings are not a representative research results, but they offer a unique insight into the situation at small schools (usually with tens of students) of which there are a considerable number: there are less than 100 students in 43.54 percent of Czech primary schools (Základní školy, 2014). These schools have more limited resources (financial, material and personal) which can influence their using Information Technology (IT). The results are based on the data from all 34 schools participating in the INTERES project.

The development of the Digital Divide can be significantly influenced by the extent to which IT is introduced into the work of small schools. This conviction is based on previous research (Townsend, Sathiaseelan, Fairhurst & Wallace, 2013; Reinhart, Thomas & Torskie, 2011), that proved that the Digital Divide is influenced by the size of a municipality and the correlating characteristics of the inhabitants, including the level of education of adults and their socio-economic status. In 2010, a standardized tool for the self-evaluation of Czech primary and secondary schools was designed called Profil Škola 21, and it makes possible the analysis of the use of IT in different areas of schools' activities (Brdička, Neumajer & Růžičková, 2012): management and planning, ICT in the school curriculum, professional education of teachers, integration of ICT in the life of the school and ICT infrastructure. The tool uses a four level scale for 29 indicators covering these activities. It was inspired by similar tools by BECTA (Self-review framework) and the Irish National Centre for Technology in Education (ICT Planning Matrix). This tool was used to describe of the use of IT in all observed schools at October and November 2014. The obtained data allow comparisons of small schools with hundreds of schools (usually larger) that decided to use the same tool a few years ago. They were also used for the analysis of the needs of educational institutions.

Afterwards, touch devices for 350 teachers working in the schools who participated in the INTERES project were purchased. A series of five IT trainings in each school and individual mentoring consultation for all teachers were carried out according to identified needs. The field reports and evaluation questionnaires from each educational activity produced data about competences of teachers in small Czech schools and interesting ideas for further training of pedagogues. The research has shown that – contrary to our assumption – formal pedagogical education of the trainers and their broader teaching experience from primary or secondary school is not so important for the teachers; what is much more important is that the trainers are experts in the topic explained (using a certain device, for instance) and that they are able to explain it in a way understandable to the teachers, especially with respect to the level of complicatedness and the use of terms with which the teachers are familiar.

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Keywords: education, primary and secondary schools, research, teachers, touch devices

# KNOWLEDGE, SKILLS AND ATTITUDES OF LIBRARIANS IN DEVELOPING LIBRARY USERS' INFORMATION LITERACY

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#### **OBJECTIVE AND VALUE**

The objective of this study was to explore how Estonian librarians assess their information literacy and which knowledge, skills and attitudes they consider important in facilitating the development of information literacy of library users. Librarians and information professionals of vocational schools, applied higher education institutions and universities participated in this research. The central research question of this study was: what knowledge, skills and attitudes do librarians need in order to facilitate the development of information literacy of library users in vocational and higher education institutions? In order to find an answer to the central research question the following sub-questions were formulated: How do librarians define information literacy? How do librarians enhance information literacy of library users? What knowledge, skills and attitudes do librarians need to facilitate the development of information literacy of library users? Do librarians have the necessary knowledge, skills and attitudes to facilitate the development of information literacy of library users? How could librarians acquire or enhance the necessary knowledge, skills and attitudes to facilitate the development of information literacy of library users? How could librarians acquire or enhance the necessary knowledge, skills and attitudes to facilitate the development of information literacy of library users? How could librarians acquire or enhance the necessary knowledge, skills and attitudes to facilitate the development of information literacy of library users? Do all librarians need to be able to facilitate the development of information literacy of library users?

#### Methodology

The research strategy used in this study was a case study; a multiple case study within a post-positive paradigm. Document analysis, semi-structured interview and expert interview were the main data collection methods. Eight libraries of vocational and higher education institutions were involved in this study: Academic Library of Tallinn University, Tallinn University of Technology Library, Tallinn University of Applied Sciences Library, Library of the Estonian Academy of Security Sciences, Tallinn Health Care College Library, Library of Tallinn Polytechnic School, Tallinn School of Economics Library, and the Library of Tallinn Music School. Twenty interviewees participated in this survey: fifteen librarians and five experts. The data analysis method was the discourse analysis.

#### OUTCOMES

The paper reviews the existing literature and provides the results of the study. The results of the study indicated that librarians assess their information literacy on the level of "good". In order to carry out training for library users on information literacy, the following knowledge and skills were highlighted: pedagogical and andragogical knowledge and skills, including teaching skills, knowledge of different teaching methods and training structure, presentation skills, proficiency in information technology, extensive knowledge of the learning domain, knowledge of various sources of information, skills in foreign languages, knowledge of marketing and study systems, interpersonal skills, critical thinking skills, knowledge and understanding of different target groups, professional expertise in information science, ability to cooperate with faculties, knowledge of the web-based and e-learning environment, academic literacy, counseling skills and possession of the terminology of the taught specialties. Interviewed experts complemented the list of knowledge and skills by adding knowledge of copyright. The interviewees indicated the knowledge and skills that are needed for the development of information literacy related instructional materials for library users: good foreign languages and Estonian language skills, knowledge of digital environments and knowledge domains, professional expertise in information science, good knowledge of different databases, and ragogical knowledge and skills, knowledge of library classification and systems, as well as of target groups. The study results revealed that personal characteristics and attitudes of librarians were also important: for example, openness, centrality of the learner, patience, self-confidence, friendliness and kindness, motivation, sense of humour and curiosity. The interviewees found that pedagogical and andragogical competencies and marketing are the areas that need further enhancement.

Keywords: information literacy, librarian, information professional(s), competencies, teaching, facilitating

## Using Google Sites to Promote 7th Graders' Information Literacy, Reading Comprehension, and Information Technology through Inquiry-Based Learning in Taiwan

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The purpose of this study is to investigate the effects of an intervention that used a collaborative teaching approach and inquirybased learning on the development of seventh-grade students' information literacy, reading comprehension and information technology skills. In the 21st century, technologies speed up transportation and communication across physical spaces, hence are gaining prevalence. Because of the ever evolving technologies, people are now in dire need to improve their learning abilities for new skills (Black, 2009). According to Ho's study, 30% percent of the junior high school students are disappointed with their learning results. Students' satisfaction rate toward their own learning drops as their seniority increases. It also shows that approximately a quarter of the students are totally lost in pursuing course contents. Proportionally, senior students feel more lost than their junior schoolmates (Ho, et al., 2012). Kuhlthau described that the inquiry process as the most effective way of learning. Students need and will learn 5 five methods through inquiry teaching: information literacy, learning how to learn, curriculum content, literacy competence and social skills. The collaboration among teachers makes it possible for students to acquire these skills simultaneously (Kuhlthau et al., 2007).

This research used Google Sites as the teaching and learning platform. It was based on The Newport News Public Schools Inquiry Process (Questioning, Planning, Collecting and Crediting, Organizing, Synthesizing, and Communicating) (Carnesi & DiGiorgio, 2009). The participants consisted of 28 seventh-grade students, a Teacher Librarian (who is also the Science and Technology teacher), and a Computer Teacher. The research data were collected through quantitative and qualitative methods; the instruments for quantitative data collection included information literacy assessment, PISA, after-class test, IT (Information Technology) measurement and a questionnaire. Qualitative data were collected through Google Sites documents, interviews, and observations.

Here are the findings of the project:

(a) The two teachers played essential roles in preparing students with information literacy, reading comprehension, and IT skills through their collaboration and instructional content design. (b) The scores of students' IT skills improved significantly after employing the inquiry-based learning, although students' reading comprehension and information literacy assessment didn't show big changes. (c) Students indicated a positive impact of collaborative teaching and inquiry-based learning on the development of their information literacy, reading comprehension, curriculum content, and IT skills. And (d) the study found both teachers' and students' attitudes and perceptions showed positive effect towards Google Sites collaborative process.

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Keywords: collaborative teaching, inquiry-based learning, information literacy, information technology, reading comprehension
# THE MORE THEY TRIED IT THE LESS THEY LIKED IT: NORWEGIAN AND ROMANIAN STUDENT'S Response to Electronic Course Material

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Even though both countries have signed the Bologna declaration, study conditions for Romanian and Norwegian university students are still quite different. One of the differences is access to study literature in the library, both in electronic and printed form. Earlier research comparing the attitudes of Romanian and Norwegian university students (Landøy & Repanovici 2008) showed that Romanian students were much less satisfied with access to study literature through the library than Norwegian students. It also indicated that students in Romania were more in favour of electronic study literature than those in Norway. Landøy and Repanovici speculated that Norwegian students might have tried electronic study literature and been disappointed while Romanian students might have a more idealised view of the possibilities.

In this paper we present and compare survey findings from Romania and Norway taken from the "Multinational study on students' preferences regarding print versus electronic resources for course readings." This study, conducted in April 2015, surveyed undergraduate, graduate, and postgraduate students studying in various subject disciplines at different universities. The aim was to find out what the students' format preferences are when engaging with their academic readings and what factors impact their preferences and behaviours. Since the same survey was conducted in different countries we compared the results. Our findings showed show whether students' reading format preferences vary or remain consistent across multi-national student populations.

In addition to providing results of this new study, we compared our results with those from the earlier research mentioned above. We particularly looked at the reasons given for preferring course readings in either electronic or print format, and we discussed what this could mean for collection development policies.

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Keywords: print vs electronic, study literature, Norway, Romania

# INFORMATION LITERACY AND INFORMATION CULTURE IN HIGHER EDUCATION INSTITUTIONS IN ESTONIA

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# **OBJECTIVE AND VALUE**

Information culture is an important component of an organization. Every organisation, no matter how large or small it is, regardless of type and function, wherever in the world it is situated, has an information culture (Oliver 2011, 9). However, information culture is difficult to define and many approaches exist. In the wide range of approaches, information culture is closely linked with information technology, information systems, and the digital world. However, Davenport (1994) notes that effective information management could be achieved only when people use information efficiently, not machines. Information literacy is an integral component of information culture and information technology could be seen as a facilitator of the information culture. Gillian Oliver (2011) suggests the framework for assessing information culture in organizations. She finds that information culture is shaped by influences occurring at different levels – some of which are more open to change than others. She suggests that there are three levels of organizational culture and the second level is directly related to information literacy and awareness of environmental (societal and organisational) requirements relating to information (Virkus 2012). In this paper we focus on the information culture including information literacy, information management and job satisfaction, leadership style, and self-reported individual performance.

# Methodology

Our research used a web-based questionnaire survey. The questionnaire consisted of 39 questions, both closed and open-ended, thus yielding both quantitative and qualitative data. We grouped similar questions together; questions were related to behaviour and values, information management, usage of information resources, job satisfaction, opinions about leadership, judgement of the effectiveness of respondents' own work, and the effectiveness of the whole unit. We presented most items as statements and respondents indicated their agreement with on a scale of 1 (strongly disagree) to 5 (strongly agree). We conducted a pilot study in two public universities with 32 academics. A total of 160 academics from 12 HEIs (four universities and eight professional HEIs) completed the survey. We conducted factor analysis and multivariate analysis using statistical analysis software SPSS.

# OUTCOMES

Factor analysis revealed three types of information culture: (1) integrated; (2) pro-active; and (3) informal. We found a significant correlation between information culture with integrated information sharing and use (type 1), and job satisfaction, leadership style as well as perceived subjective effectiveness of work. We suggest that the construct of information culture consisting of values, norms, and behaviours related to information sharing and use in organisations is a valuable construct in analysing information environments and relations with job satisfaction, leadership style, and self-reported individual performance of HEIs in Estonia.

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**Keywords**: information culture, information literacy, information management, job satisfaction, leadership style, self-reported individual performance, higher education institutions, Estonia

# ORGANIZATIONAL KNOWLEDGE SHARING and Sustainability: Two Case Studies from Local Government

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Climate change and its consequences challenge national, state and local governments to develop strategies and practices that will embed sustainability at the heart of plans for the future. Research into knowledge and information sharing practices, both within and between organizations, may facilitate environmental and social sustainability, however few studies have taken an information literacy approach.

#### **OBJECTIVES**

Contemporary practice theory understands and explains actions by reconstructing the symbolic structures of knowledge that enable and constrain agents to interpret the world according to certain forms and to behave in corresponding ways (Gherardi, 2012). This paper explores organizational knowledge sharing practices and information literacy in the context of two sustainability initiatives within local government from a practice theory perspective. It takes a sociocultural approach and investigates the applicability of Lloyd's (2010) four activities of information literacy practice to a multi-disciplinary team environment in local government, namely influence and information work and information sharing and coupling.

#### Methodology

The study explores two case studies of knowledge-sharing work practices in local government in an Australian city each seeking to deliver more sustainable environmental and economic outcomes for the local community. One case study is situated within a single local government authority and focuses on a multi-disciplinary work team, while the second spans six local government areas around a river catchment area bringing together people with diverse biodiversity knowledge and expertise from different organizations. Data was collected over several months from project team meeting attendance and one-on-one guided conversational interviews (Siedman, 2013) and analyzed using thematic analysis.

#### OUTCOMES

The study identified the presence of all four of Lloyd's information literacy activities in the knowledge-sharing practices of the participants. However, from the report of each participant, it emerged that one or two of these activities dominated their knowledge sharing experience. The socio-cultural approach taken also allowed the significance of emotion in the sharing experiences reported by participants to be highlighted. Participants reported a high level of emotion, both positive and negative, as a central component of their knowledge sharing experience. These results reflect Savolainen's (2015) recent work that suggests emotions are contextual factors that affect sharing, and reinforce the use of practice theory as a way of understanding the complexity of information literacy.

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Keywords: knowledge sharing, information literacy, emotions, practice theory, sustainability

# **Two Years of Information Culture Development for Supporting Higher Education: Initiatives, Teacher's Perceptions and Future Actions**

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Information Culture Development (ICD) was established in 2013 as a holistic information literacy program developed within the System of Libraries (SL) of the three-campus CETYS Universidad in Mexico. ICD is a key initiative in the recent organizational evolution of the libraries and its development and execution are in charge of the Information and Learning Development Librarians (ILDL), formerly known as reference librarians. ICD was built and defined by taking into account different elements, such as: the institution's strategic plan, the recommendations made after the accreditation granted by the Western Association of Schools and Colleges (WASC), the perspectives and needs pointed out by academic staff interviewed during the ICD planning stage, and the previous experiences of ILDL in developing similar initiatives. Furthermore, ICD is driven by action research (AR) and the concept of information culture, which is grounded in recent research literature and comprised of information literacy, digital literacy, as well as 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 university practices related to curriculum, teaching, and research. ICD addresses all university stakeholders with different initiatives, such as: courses, workshops, instructional and promotional flyers, newsletters, video tutorials, bibliographies, reference services, subject guides, scientific communication support guides, student tutoring, research and publishing support for teachers, evaluating new information resources to increase SL's offering, assessment of information literacy skills I students, and improving statistical measurement of library services. These initiatives are contained within ICD's four axes: a) curriculum and learning support, b) information and digital literacies development, c) research and scientific communication support, and d) evaluation and communication of results. This article presents such initiatives, the procedures behind their construction and the instruments used to evaluate them. Moreover, it analyses data gathered during these two years of the program regarding user learning and satisfaction, depending on the kind of initiative; as well as a recent survey of academic staff who have benefited from the aforementioned initiatives, both for themselves and for their students. Hence, the academic staff selected for this survey have fulfilled at least one of the following conditions during the past year: a) they have benefited from ICD's initiatives; b) they have collaborated with ILDL in academic or research activities; and c) they have tasked the ILDL to develop courses or workshops for their students, and they have assumed active participation during such activities. The data analysis performed allows for determining ICD's role in effectively supporting the development of an information culture and positively influencing teaching, learning and research practices in the university. Furthermore, academic staff insights help guide the program's further development by pointing toward the need for future actions and strategies.

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

# THE TECHNICAL AND HIGHER-LEVEL SKILLS OF Public Librarians for Supporting Digital Literacy and Inclusion Programmes

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#### INTRODUCTION

Public libraries play an important role in ensuring the development of digital literacy and inclusion (DLI) for the public which are essential for creating successful communities, a competitive workforce and overall social well-being (ALA, 2013). In order to be key players in this area, public librarians are required to stay up-to-date with the fast changing information and communication technologies (ICT) and to continuously develop their cognitive skills centered around the critical evaluation, effective management, communication and ethical use of information (Lankshear & Knobel, 2008). However, in order to assert their role and leadership in facilitating DLI programmes, they should also develop a range of higher level skills in new areas which will help them effectively communicate with their communities, build partnerships, manage and evaluate DLI projects and services.

#### **Research Objectives, Study Design and Results**

This research was conducted with the following aims: a) understanding the nature of digital literacy services and programmes public libraries offer to their communities; b) identifying the technical and higher level skills that public librarians require for the purpose of facilitating and supporting the development of digital literacy and c) examining the level of training available to public librarians for developing their own digital literacy skills. A case study approach of four U.S. public libraries in North Carolina was followed, which involved multiple sources of evidence. The methods of data collection used included semi-structured interviews with nine librarians and five library management staff and the examination of DLI policies and training documentation available in the different public libraries chosen for this research. All interviews were held between December 18, 2013 and January 14, 2014; they were transcribed on InqScribe, coded using NVivo 10 and analysed using template analysis.

Three of the participant libraries placed specific emphasis on DLI and on increasing their community connections and partnerships. The main ICT training offered to the public included basic computer and office software skills, assistance with on-line forms, email accounts, electronic databases and e-books. The technical skills required by librarians included basic technical support and troubleshooting, advanced online research skills, using mainstream operating systems and office software, social media platforms (including outreach statistics) and e-books and basic web and database design. However, librarians felt that university library programmes had not adequately prepared them for all the technical skills required for their working environments and also encountered work-related obstacles including institutional priorities, outreach problems, lack of resources and staff training. Higher level skills needs addressed the design, management and evaluation of DLI programmes, communication with the public and external stakeholders, and understanding community needs and public policy issues. Instruction and pedagogical methods were also mentioned as important skills that should be taught in library programmes. Although the DLI development of staff was a priority by management, there was lack of formal training and some librarians kept up with current developments on their own, following blogs, reading professional journals and attending free webinars. Public libraries should create a strategic plan with set DLI policies and continuing education as a priority. University library programmes should also make internships a requirement and offer more and current technology classes.

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Keywords: digital literacy, digital inclusion, public libraries, communication, staff training and development

# ESTABLISHING A RESEARCH DATA MANAGEMENT AND Strengthening Information Literacy: A New Challenge for German University Libraries

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In recent years, the exponential growth and increasing complexity of digital research data have had a considerable impact on research, creating a need for new and suitable infrastructure with which to manage these data. Universities are playing a decisive role in this current challenge. Against this background, the general meeting of the German Rectors' Conference (Hochschulrektorenkonferenz = HRK), which serves as the umbrella organisation for higher education institutions in Germany, passed a recommendation which strongly advises universities to adopt a series of specific measures with which to establish a research data management system on the institutional level.

The university libraries are predestined to play an important role in this process. The new challenge of research data management offers them the opportunity to extend their traditional profile and strengthen their position as a service provider at the heart of the university. Librarians can:

- support researchers by handling, processing and storing their data
- provide scientists with platforms where they can share their data and collaborate.
- help to describe and document the data and provide researchers with an adequate repository.
- support researchers with regard to administrative tasks, such as drafting a data management plan.
- In particular, one of the most important assets of the libraries consists of strengthening information literacy, also for data management purposes. Librarians can:
- provide students in master classes, postgraduates and senior researchers with specialized courses on data management.
- advise them where to find continuing education outside of the university.
- help teachers to present data sets in a comprehensible and attractive form.

However, it seems inevitable that librarians must work on their own skills to deliver those services. They should try to develop new professional profiles such as data steward, data librarian or data scientist. Nonetheless, libraries will also need to recruit new specialists in the field of data management. Such staff-related measures seem to be a prerequisite of sustainable structures supporting research data management. Great Britain as well as the Netherlands and Denmark (because of their more centralistic political systems) are enjoying an edge over Germany in these terms. German university managers therefore have expressed their firm intention to offer new degree programmes in the field of data management. This could be one component of many required to establish a research data management in the future.

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Keywords: research data management, libraries, information literacy

# THE ROLE OF KINDERGARTEN EDUCATORS IN ICT-Supported Education of Lifelong Learners

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The aim of this paper is to analyze the role of kindergarten educators in early Information and Communications Technology (ICT)-supported education and to reveal their attitudes and motivation towards using ICT in their work. Study by UNESCO (2010) brings kindergarten reports from different parts of the world, showing that the concept of ICT education among kindergarten educators tends to be oversimplified and misinterpreted as "learning about computers". Some environments have a clear vision and development plan for ICT-supported children's learning (Kalaš, 2013), proving that educators act as bearers of the educational process who meet the challenges and affect the level of acquired competences, and thus the level of the child's self-esteem. In other settings, however, educators have a sense of uncertainty about the potential of ICT for early education (Price, 2009). Judge, Puckett & Cabuk (2004) emphasize the importance of ICT-supported education for children who do not have access to ICT at home. It helps to reduce the digital gap that occurs at school, when the ones who had ICT access at home come better prepared for school activities. Our kindergarten survey among educators in Croatia showed the positive attitude towards implementation of ICT-supported education in kindergartens. The study included 46 educators from Milan Sachs kindergarten in Zagreb. While expressing their opinions, 75.6 percent of them recognized that ICT can be a mitigating factor in early education. Regarding the attitudes of educators about the advantages and disadvantages of using ICT in work with children, 2.17 percent expressed a very positive attitude towards early ICT-supported education, which is equal to the percentage of educators with the extremely negative attitude. A relatively small number of educators opted for the mostly negative attitude (6.52 percent), while a relatively large number of educators (54.35 percent of them) expressed mostly positive attitude towards early ICT-supported education. The attitude of 34.78 percent of educators is neither positive nor negative. As part of this paper, our research results are compared to findings for other countries, such as Greece, Israel, Chile, Slovakia, Singapore and Malaysia (Hinostroza, Labbé & Matamala, 2013; Teo, Lee, Chai & Wong, 2009; Manessis, 2011; Kalaš, 2013: Magen-Nagar, Firstater & Schwasbky, 2013). We can summarize that educators generally understand the necessity of their own ICT education and lifelong learning, as well as the importance of their motivation to transfer their ICT knowledge and skills to the youngest lifelong learners (ages 3 - 7) in the most innovative way possible.

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Keywords: ICT-supported early education, kindergarten educators, early childhood, children's early development

# Academic Reading Format International Study: Investigating the "Print or Electronic" Question around the World

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The Academic Reading Format International Study (ARFIS) investigates the attitudes and behaviors of university students around the world towards academic readings on paper and onscreen. It seeks to answer the questions: What are the format preferences and behaviors of college and university students when engaging with their academic readings? Do they vary across cultures and institutions? How do these behaviors and attitudes compare across an international sample?

At the 2014 European Conference on Information Literacy (ECIL), Mizrachi presented results from her study of undergraduates' format preferences for class readings – electronic or print. Responses from 390 students at the University of California, Los Angeles (UCLA), showed that these students overwhelmingly preferred print format for learning purposes but liked the convenience and the perceived lower cost of electronic. Boustany then suggested a replication of the same study in different countries to produce comparative results and to see whether students' reading format preferences vary or maintain consistency across multinational student populations. Boustany and Kurbanoglu had already carried out previous international survey studies so the same methodology was adapted for ARFIS.

Colleagues from different countries were invited to participate and eventually researchers in 27 nations signed on: Australia, Bulgaria, China, Croatia, Czech Republic, Finland, France, Germany, Hungary, India, Israel, Italy, Latvia, Lebanon, Lithuania, Moldova, Norway, Peru, Poland, Portugal, Romania, Singapore, Slovenia, Switzerland, Turkey, the United Kingdom, and the United States. The researchers employed Google Group and ARFIS Facebook pages for communication and to generate more interest and publicity. The original survey was slightly modified for international use and includes all levels of students and all fields of study. The ARFIS questionnaire consists of 17 Likert-style statements on academic reading behaviors and preferences, six demographic questions, and an open prompt for any further information. All questions include a box for optional comments. The survey was uploaded onto the LimeSurvey platform and each researcher given his/her own account. Researchers were responsible for ensuring the accuracy of their translated survey and distributing it in their own institution or country.

Country data were collected from March through May 2015 and then combined for comparative work. Over 20,000 responses were recorded from students in 24 countries. Individual researchers are free to analyze, use, and publish their country data in the way they like. Boustany, Kurbanoglu, and Mizrachi will combine all data together to make further analysis and comparisions in summer 2015. At ECIL 2015 they will hold a special session where they will discuss the organization, methodology, and process of ARFIS, setting the context for presentations by individual country participants.

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Keywords: print reading, electronic reading, academic reading, international studies, college students

# Searching for Visual Literacy: Secondary School Students are Creating Infographics

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Visual literacy is an increasingly important group of acquired competencies that should be developed for success in an ever more visual and digital world. Because we are surrounded and inundated by technology, it has become necessary to be able to "communicate more instantly and universally" which can be met by visuals (Metros, 2008). Nowadays "pictorial turn" is taking place, which means the existence of images is more crucial for communication and meaning making rather than entertainment and illustration (Felten, 2008). Although the students are experienced users of digital media, they lack skills and vocabulary knowledge for deciphering an image and communicating nonverbally (Metros & Woolsey, 2006). Becoming visually literate enables students to interpret and compose more complex visual messages during communication or meaning making process. Because "Living in an image-rich world, however, does not mean students naturally possess sophisticated visual literacy skills, just as continually listening to an iPod does not teach a person to critically analyze or create music" (Felten, 2008), visual literacy centered learning strategies should be developed. Whatever it is, the strategy should inform learners about visual communication principles, and be transferable to other subject areas (Sims, O'Leary, Cook, & Butland, 2002). In this study, creating an "infographic" is handled as a learning strategy within a design model proposal covering the entire process. Infographic is defined as a "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). Infographics are the most memorable visualization type; they contain pictograms, color, low data-to-ink ratios, and high visual densities (Borkin et al., 2013). In addition to being "the sweet spot where linguistic and nonlinguistic systems converges" (Krauss, 2012), infographics enable learners to visualize the big picture of a complex idea or content (Lamb & Johnson, 2014). The design model of the study for creating infographics through the learning process is based on generative learning theory, which offers designing "learner generated activities" (Grabowski, 2004). The implementation process was carried out with the collaboration of Science and Technology, Visual Arts, Information Technology, Technology Design and Linguistic teachers, which makes this study seriously different from other studies. Research was conducted with two separate groups (experimental and control groups) comprised of 45 secondary school students, aged 12, who had never created infographics before. The experimental group created infographics themed "Pulleys and Levers" individually. The infographics were assessed with a detailed rubric comprised of two main dimensions for evaluating the content and the visual structure of the infographics. The pre and posttests, retention and transfer tests were applied for investigating the effect of creating infographics on the transfer and retention of the infographic theme. Within this study the design model proposal and the actual process of pilot study will be explained; the evaluation results of infographics and the pre-post test, retention and transfer test results will also be presented.

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Keywords: visual literacy, infographics, secondary school

# INFORMATION AND COMMUNICATION TECHNOLOGY Utilisation Skills among Undergraduate Law Students in Nigerian University Law Libraries

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The paper aims to investigate the Information and Communication Technology (ICT) utilisation skills of undergraduate law students in Nigerian university law libraries based on the following objectives: To establish ICT sources used by law students; to determine the purpose for which the students use ICT resources in law libraries; and to understand the challenges faced by law students using ICT sources in law libraries. Descriptive survey research method was adopted. The sampling frame consisted of 12 universities selected from 34 universities in Nigeria. The total population consisted of 7219 law students in the second to fifth year in the universities, with 391 law deans and 12 law librarians. A purposive sampling technique was used to select 1534 law students out of the 7219 law student and 24 key informants. The sample size consisted of 1534 law students, 12 law deans and 12 law librarians. Open and close ended questions were administered to the law students to elicit responses from the students, while semi-structured interview schedule were used to question the key informants. One thousand two hundred and sixty (1260) usable questionnaires (82 percent) were retrieved and analyzed. Observation method was used to complement the questionnaire and interview. The observation approach was used to observe the 12 law libraries, while 120 law students ICT literacy skill, (10 students selected from each of the 12 universities) were tested. Data for the study was collected between December 2011 and November 2013. The data collected from the questionnaires administered to law students was analyzed with Microsoft Excel Statistical version. Face-to-face interview data was collected from the 20 key informants (12 law Librarians and eight law Deans). This was transcribed and arranged into themes for content analysis. The data collected from the study observation was also arranged into themes for content analysis. The major finding showed that 90 percent of the respondents were ICT literate and were able to independently search information from Internet. This finding was confirmed during the ICT literacy skill test carried out on the students which showed that most of the law students had some ICT literacy skills. The observation showed that respondents underestimated the degree of their ICT search skills. Findings also revealed that most of the students did not access nor use law library ICT sources. The study also found that, ICT facilities available in law libraries are very seldom used, as only 45 percent of the law students agreed that the available facilities contributed towards their information seeking. The dominant factors identified as affecting law students' ICT utilization were inadequate funding, lack of uninterrupted power supply and lack of competent staff to teach ICT literacy skills to access information from Internet and electronic libraries. The paper recommends that: ICT skills training should be included in the law faculty curriculum as a compulsory subject; law students should develop the skill to utilise ICT services and university funding authorities should provide sufficient funds to purchase ICT resources, recruit IT staff, and provide uninterrupted electricity power.

Keywords: ICT utilisation skill, undergraduate law students, law libraries, Nigerian universities

# Vectors of Modern Media Education Development

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Media education – the active process of development and self-development with the help of material and means of mass communication (media). In one case it is the formation of information literacy (IL), in the other – on media literacy (ML). Since this active process usually takes place at the same time, recently another concept has been actualized - media and information literacy (MIL). Some researchers consider it an umbrella term, comprising many concepts, which include the term "literacy". The term "profession oriented media education" now is being enriched with new content. This is due to the fact that media is included in the system of higher education in the preparation of specialists for different industries. In the monograph "Media competence of a specialist" is an example of the introduction of profession oriented education in the training of future specialists for editorial sphere. This is stated in the submitted article.

Currently the problems of media education are in the focus of educators, journalists, arts specialists, social pedagogues, psychologists, experts from different fields of knowledge. They pay attention to interdisciplinary and increasing interest in this relatively new phenomenon of human knowledge. The author defines vectors of modern media education, and predicts its development in the coming years.

Also there is time to talk about media sociological vector in the development of modern media education. You can expect the emergence of media sociology as a new field of human knowledge.

In the paper the authors examined the vectors of modern media education, having defined them as profession oriented, media pedagogical, media psychological, media ecological, media sociological. Some of them have already roots in the Ukrainian educational field, and form new research areas (media psychology, media ecology, media pedagogy, media didactics, etc.), while others just gain momentum for separation and development (media sociology, mediocrities).

**Keywords**: media education, media education development vector, profession oriented media education, media psychology, media ecology, media sociology, media didactics, umbrella term

# MEDIA EDUCATION: "JOURNALISM FOR ALL", "Subject-", "Profession-Oriented"

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Media education is an activity process of development and self-development with the help of material and means of mass communication (media). In one case it is the formation of information literacy (IL); in the other case it is media literacy (ML). As a rule, this active process usually takes place at the same time. Recently, another concept has been actualized - media and information literacy (MIL). Some researchers consider it an umbrella term, comprising many concepts, which include the term literacy".

The task for a specialist in the information age is to develop critical thinking, the ability to analyze and select personally meaningful information, structure it, compile it and use media products with understanding. And thanks to media education, students receive an incentive for self-education. We get convinced of this, when we read the monograph Media competence of a professional. In this work the authors give examples of how to get media competence in the editorial profession.

The students' studies from the "Publishing and Editing" department (Publishing and Printing Institute at National Technical University of Ukraine "KPI"), performed in line with our experimental course "Media Education", make the basis of this monograph. It is the practice of teaching a special course that convinced us of the need to "convert" media education "in general" to "profession oriented media education". During the introduction of a special course there was particularly successful independent students' research work, aimed to be done as homework. However, at present, some authors of this monograph (Yu. Horun, V. Kravchuk, N. Kryvonis (Lytvyn) successfully solve the problems of profession oriented media education at the postgraduate level. Aspects of their research are indicated by the word "first" as their topics are new, relevant and insufficiently studied. Their works are a significant contribution to the development of media education not only in the Ukrainian context.

Modern media education offers a wide scope for the development of new theories and concepts, approbation of unique educational technologies, and all that is illustrated in this work.

Experience in preparing for the publication of comprehensive studies, united by one idea – profession oriented media education – and supervised by one leader can be a good example for many departments, preparing specialists of the XXI century for independent activity.

In Ukraine, in such a "thorough" use of media in the classroom on the subject, perhaps in computer science teachers have the most solid experience that successfully develops information and communication technologies (ICT) in the classroom. We can predict that in the near future the subject media education and profession oriented media education will find many supporters and will flourish.

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**Keywords**: media education, profession oriented media education, journalism for all, subject media education, media information literacy, media competence

# Information Seeking Behaviour of Scholars Using Resource Discovery Systems

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Information literacy is defined as the set of an information seeker's competencies which, according to Doyle (1994), are abilities to "know when to use online resources, know how to access information competently, know how to evaluate information as to accuracy and pertinence for each need, and know how to use this information to communicate effectively" (p. 35). Academic scholars rely on their information competence within the context of online searching through generic online search engines. However, when scholars are constrained as to the perceived resources that are available to them, their search is inhibited. In an unfamiliar digital environment an information seeker will be required to explore and discover likely resources before utilising them to find sources for information gain. Libraries and their web-based services are gateways to seek information from. Despite libraries having a long history of organizing information, a study on the information seeking' behavior of academic scholars shows evidence describing library resources available to their institution with "poor usability, high complexity, and lack of integration" that "act as a barrier to information search and retrieval" (Wong et al., 2009, p. 5). Hypotheses for this barrier to effective resource utilisation and discovery have been attributed to factors such as information overload (Bawden & Robinson, 2009) the inability to decide "where to search" (Shneiderman et al., 1997). One of the key problems is that often in order to locate desired electronic information, the academic scholars often has to "search across several different databases that have different operating procedures" (Wong et al., 2009, p. 37). Additionally, academic scholars are "unaware of the scope of their own institutions' library resources" (Wong et al., 2009, p. 36), how to access these resources through a successful search strategy. The contributions made in this article are twofold. Firstly, we present an information seeker model identifying the journey taken within a digital library environment utilising electronic resource discovery systems. The model conceptualises the behavioural activity patterns of academic scholars from the information need stage until the termination of the search activity. We also present complementary information on factors affecting behaviour such as emotions and cognitive state, similar to models such as Kuhlthau's (1991) information seeking model. Secondly, we elicit suitable user requirements which formulate heuristics, informing the design and development of such systems. Report suggests "that the gaining of information literacy may be more a case of chance than design" (Wong et al., 2009, p. 36. The same research reports that participants want quick, easy and unproblematic access to download likely sources. These created heuristics can also be used to evaluate already existing systems. Our findings are contributing to new standards such as the ones being drafted by the International Federation for Information Processing Guidelines on Information Management. To accomplish this we apply participatory research design, involving several stakeholders, such as students, researchers, professors and librarians. An exploratory study through questionnaires was conducted and inform a second targeted study. The second study involved diary logs of users' search process within a real library setting and interviews to collect empirical evidence that inform the creation of the user model.

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Keywords: information literacy, digital libraries, information seeking

# Senior Citizens, Media and Information Literacy and Health Information

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# **OBJECTIVES AND METHODOLOGY**

The aim is to study how preferences of senior Icelanders for health and lifestyle information has developed in the period from 2002 to 2012. While health information is increasingly being disseminated digitally, concerns have been raised that due to lack of access and practice at using the internet and mistrust of the information, senior citizens may not benefit as much from the digitalization as others (Fischera et al., 2014). Others suggest that older people will gradually become more active internet users (Bromley, 2004). However, recent results about social media show that over 80% of people 60 years or older have never posted, commented, signed up as friends or "liked" Facebook sites about health and lifestyle and over 70% have never received or forwarded this information (Pálsdóttir, 2014). Recent studies have mainly focused on how elderly people have adopted to the digitalization of health information. The present study aims at gaining a more holistic picture by comparing their information seeking and evaluation of information on the internet with the more traditional channels media and health professionals, as well how this has developed in the years 2002, 2007 and 2012.

Questionnaires were sent to random samples of 1,000 people in 2002 and 2007, and 1200 people in 2012, aged 18 to 80, throughout the whole country. The response rate was 51 percent in 2002, 47 percent in 2007 and 58 percent in 2012. The study involves respondents who are 60 years and older, 76 participants in 2002, 116 in 2007, and 180 in 2012, divided into two groups, those aged 60 to 67 years and 68 years and older. Over the years, the questionnaire has developed in line with advances in technology and includes more digital sources in 2012 than in 2002. However, for comparison reasons it is important to use the same sets of measurements for the data from 2002, 2007 and 2012. The analysis includes over 20 sources in the information channels, media, health specialists and internet. Evaluation of information seeking and the usefulness and reliability of the information, performed with ANOVA (one-way).

# OUTCOMES

Concerns have been raised that elderly people do not have sufficient possibilities to benefit from digital health information. By comparing results about three information channels, media, health specialist and internet, the paper will give evidence about the development in elderly Icelanders' preferences for health and lifestyle information from 2002 to 2012. The findings indicated that an increase in information seeking on the internet did not happen at the expense of the other information channels. There has not been a change in the value of the quality of information in the media since 2002. The development in the evaluation of the usefulness and reliability of information on the internet and from health specialists was more varied and will be presented in the paper. An overview of the development is essential for the design of better education procedures. The findings provide important knowledge about how elderly people can be reached with information and provided with support to enhance their abilities.

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Keywords: health information, information seeking, internet, media and information literacy, reliability, usefulness, senior citizens

# THE READING PATH OF SINGING REVOLUTION CHILDREN: A Longitudinal Study of Reading Behavior and Reading Results of Läänemaa County Children

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# **OBJECTIVE AND VALUE**

When the results from PISA were published, it was a shock to realise that one in five of our 15-year-olds in the European Union (EU) still had insufficient reading skills. Another matter of concern was the widening gender gap: girls were reading better and more than boys. More than 73 million adults in the EU had low qualifications and many of them did not have sufficient literacy levels to cope with the daily requirements of personal, social, and economic life (EU High Level Group of Experts on Literacy, 2012). Therefore, it is important to explore the factors and conditions that influence reading skills, which are prerequisite for information literacy (IL), in order to improve these skills in Estonia, Europe, and globally. Ramirez (2002, 1) notes that IL must be inter-related to two other fundamental and very closely related objectives – increasing and widening basic reading literacy skills and levels and modernizing cultures so that they can become members of the information society. These three key related ideas – IL, reading literacy, and modernizing cultures – are inter-dependent and even counter-dependent. Therefore, unless they are treated together in the context of educational reforms, public policy planning, and developmental improvement strategies, there is a risk that national policies, institutional educational and training reforms, and costly resources will be misdirected, wasted, and be unnecessarily complex and overlapping. In this paper we reported the results of a longitudinal study of reading behaviour and reading results of Läänemaa county children with insight on the transition of education and culture from the Soviet system during the years of 1997–2008.

#### Methodology

We conducted a longitudinal survey study of reading behaviour and reading results of Läänemaa county children in the home and cultural context. Our aim was to identify changes in the literacy and reading habits and the factors that influenced it. In addition, we explored high-risk groups who had reading difficulties to ascertain how the home environment influenced this process. We formulated the following research questions: (1) What are the changes in performance level of functional reading from first to ninth (12th) grade and their relations with reading activities and children's other activities including informal education? (2) What are the changes in reading activities from first to ninth (12th) grade and elementary (first through third grade) and middle (sixth through ninth grade) school and their relationship with children's other activities including informal education? (3) How were the family and early development factors related to the above mentioned changes? (4) How did changes in reading test results and reading behaviour reflect general and cultural changes in society and education during the explored period, 1997–2008?

# OUTCOMES

We developed a three dimensional model based on the longitudinal survey results that included reading techniques (formal literacy/reading skills), reading comprehension (functional literacy/reading skills), and desire to read and motivation (recreative literacy/reading skills). We reported selective results of the study in this paper.

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Keywords: reading skills, literacies, longitudinal study, children, reading behaviour, reading results, Estonia

# EDUCATIONAL POTENTIALS OF SOCIAL NETWORKING IN PUBLIC LIBRARIES AND ADOLESCENTS READING

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Reading is a fundamental skill for a variety of reasons, however, new technological developments have changed the way people read. The use of social networks is increasingly becoming more and more popular in our daily lives. Generation Y or Millennials, the generation of children born in the technology age, are exceptionally familiar with information and communication technologies (ICTs). So it is an urgent need to understand how this generation's reading habits are affected by social networking. Recently, several researchers (Grossek & Kolotescu, 2008) supported the idea that a plethora of literacy skills can be developed through the educational use of social networks. They found that ICTs had changed the way ideas and information are being presented to people and emphasized the importance of being hypermedia literate is in order to follow developments in this new world. According to researchers (Hilburn, 2013) social networks expose adolescents to reading and writing skills. Since the use of social networks in formal education can make learning more interesting and enjoyable for the students, educators need to be familiar with these new technologies before applying them in the classroom. Our paper aims to identify the changing perspectives, the current challenges, and the benefits of social networks by examining library and information science (LIS) specialists' and educators' views on the issue in general and in public libraries in particular. Furthermore, we explore and discuss the benefits social networks can offer to adolescents' literacy skills in a formal and non-formal educational system, especially in public libraries. We carried out a literature search in a variety of databases on various aspects of social networking and its relationship to literacy, including digital information literacy and public libraries. We identified and analysed relevant documents. The review is organized thematically according to the subject areas that emerged from the literature. We approached the social networks literature by gathering LIS researchers' and educators' scientific views, their advice, and their main concerns regarding implementation. We divided the literature review into five sections. First, we located literature that explored the relationship between adolescents and reading. In the second section we discussed the impact of social networking on Generation Y. In section three we examined how social media can affect reading and improve a plethora of social and literacy skills in adolescents. We analyzed public libraries policies in section four. In the final section we examined how public libraries embody social networks in their policies by identifying and summarizing the main problems and challenges libraries and educational institutions face in the adoption of social networks.

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**Keywords**: social media, public libraries, librarians, adolescents, youngsters, reading habits, education, Web 2.0, social networks, ICTs, reading policy, literacy, literature review

# How can Video Games Facilitate Information Literacy?

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#### **OBJECTIVE AND VALUE**

During the last decade video gaming has grown increasingly in popularity. Video games are used for a variety of purposes including: entertainment purposes, medical purposes, various health therapies, science and technology, business, training air traffic controllers and military purposes. The use of video games in education has increased substantially in the last decade. The impact of video games on young people has attracted significant interest from media and researchers. It is proposed that games can support learning and literacy including information literacy. Video gaming can advance young people's motivation, imagination, interaction, collaboration, problem-solving and thinking skills (Gee, 2003; Simpson, 2005; Squire, 2005). According to Gee (2003) good video games equip gamers with various learning principles; in his book he mentioned 36 learning principles. The goal of this paper is to provide a systematic review of the literature on the adoption of video games by educational institutions and liberaries in order to facilitate learning and literacy, including information literacy, among adolescents and young adults.

#### Methodology

A literature search was carried out in a variety of databases and on various aspects of video games related to learning and literacy, including information literacy. Relevant documents published between 2003 and 2015 were identified and analysed. The literature review is organised around five emerging areas: video game literacy, video games in education, game design benefits, video games for reading and writing, and video games and public libraries. The literature within these categories will be discussed in this paper.

#### OUTCOMES

This paper contributes to the understanding of the use of video games by educational institutions and libraries in facilitating learning and literacy, including information literacy, among adolescents and young adults. In addition, it identifies and summarizes the main problems and challenges that libraries and educational institutions face in the adoption of video games. This paper also discusses how public libraries can use video games as a means of attracting more users.

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**Keywords**: video games, public libraries, adolescents, young adults, literacy, information literacy, game literacy, education, literature review

# MASSIVELY MULTIPLAYER ONLINE ROLE PLAYING GAMES AND DIGITAL INFORMATION LITERACY

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# **OBJECTIVE AND VALUE**

The past few years a new genre of video games has been developed - Massively Multiplayer Online Role Playing Games (MMORPGs) which is the new trend among adolescents. MMORPG is a game where thousands of people play together in an ongoing online world. In the game, the player starts at a low level or rank and progresses until he or she has achieved the maximum level or rank. During the player's lifetime in the game, he or she will gain new abilities or skills, obtain better weapons and other gear (accessories, kit, material), and get access to more advanced areas in the game that often require a party, group, or raid of people to complete. Some examples of MMORPGs are Anarchy Online, EverQuest, Guild Wars, Ultima Online, and World of Warcraft. Recently, experts in video games and education have explored the educational potentials of this specific genre of video games. Several researchers support the idea that a plethora of literacy skills including information literacy can be developed by playing MMORPGs (Gee, 2003). The paper is based on the literature review. The aim of the literature review was to identify the changing perspectives, the current challenges, and the benefits of MMORPGs from the library and information science (LIS) specialists' point of view. Further it explores and discusses the benefits that MMORPGs can offer in facilitating the development of adolescents' digital information literacy.

# Methodology

A literature search was carried out in a variety of databases and on various aspects of MMORPGs related to literacy including digital information literacy. Relevant documents were identified and analysed. The literature review is organized thematically according to the subject areas that emerged from the literature. This paper approaches the video game literature by gathering LIS researchers' scientific views and advice and identifies the main implementation concerns derived from earlier and recent relevant literature.

# OUTCOMES

The literature review is divided into four sections according to the topics that emerged: a) definitions and various views of researchers about the digitally literate person, b) the impact of MMORPGs on online learning, c) the potential of MMORPGs to improve digital information literacy skills and social skills, and d) the influence of MMORPGs on language skills of students. This paper contributes to the understanding of the use of MMORPGs to facilitate digital information literacy among adolescents. In addition, it identifies and summarizes the main problems and challenges that libraries and educational institutions face in the adoption of MMORPGs.

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Keywords: MMORPGs, literacy skills, language skills, social skills, online learning, young adults, adolescents, literature review

# Law Students' Information Literacy Skills and Protection of Environment

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This paper presents the findings of our small-scale pilot study on law students' information literacy skills and their ability to find information in the domain of protection of the environment.

Environmental issues are becoming universal topic today Numerous associations, organizations, and individuals are waging an active campaign for preserving our world as it is or ensuring that it will be even better. They essentially focus on the social responsibility and considerations for future generations by reducing our "ecological footprint". In 1998, the United Nations Economic Commission for Europe (UNECE) adopted the *Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters* (AKA Aarhus Convention). Its primary objective was to protect the right of every person of present and future generations to live in an environment adequate to his or her health. In order to make this possible, the Convention, among other things, insists on the rights of access to information and public participation in decisionmaking (Convention, 1998, article 1).

#### Design/Methodology/Approach

The aim of our research was to find out the degree of students' information literacy skills regarding environmental laws and regulations. We distributed a paper-survey in March 2015 to a sample of students enrolled in the elective course, Environmental Law, as well as students who visited the Law Faculty library during that same month. We asked students about their attitudes and views about the protection of environment and about their "green" activities (for example, recycling and energy saving). We also asked students about their level of familiarization with relevant e-information sources that deal with green issues and their ability to find, evaluate, and apply the environmental information. Through our study we will look into the possible differences in attitudes and views between the two respondent groups and investigate whether the students who chose the elective course on green legislation are more environmentally aware, as well as more information literate regarding the environmental protection, than those who did not take that elective.

# ORIGINALITY/VALUE

This is the first research conducted about the information literacy skills of law students in Croatia regarding green information, the findings of which will serve for preparation of course materials for the credited course on information literacy offered by the library. It is of particular importance for the Osijek Law Faculty library because the library is involved in numerous projects regarding environmental protection both at the national and the level of the European Union (EU) and has started a close cooperation with the instructor of the elective course in creating and designing a part of the course materials and resources.

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Keywords: information literacy, green legislation, law students, green library

# THE ENACTMENT OF INFORMATION LITERACY: AN EXPLORATORY STUDY AMONG INTERDISCIPLINARY PHD STUDENTS

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The majority of studies of information literacy (IL) have been conducted in educational settings (Whithworth, 2014). There are also a multitude of studies within the area of information behaviour that have explored how students on different levels in the education system search for and use information (Case, 2012). Even though there are an increasing number of studies that have taken a particular interest in the information practices of PhD students (for example, Catalano, 2013), research is scarce when it comes to information literacies of PhD students in interdisciplinary fields.

The overarching aim of this study is to gain deeper knowledge about the information literacy of PhD students as it is being enacted in an interdisciplinary field of research. The purpose is to identify and elucidate information literacy within the complex and heterogeneous community of PhD students in the study. The objectives are met by exploring the following research questions:

How is IL learned in the practice under study?

In what ways does IL relate to people and material objects in the studied practice?

Apart from contributing to the area of information literacy research, the present study aspires to provide guidance and food for thought for prospective PhD students and their supervisors, and for librarians who are in the position of supporting PhD students' information practices.

The study is conducted from a practice-based perspective, according to which information literacy is conceived as something that is learned through interaction within the socio-material practice where the learner is active. Information literacy thus comprises a familiarity with and an understanding of how information is sought and used in a certain context (for example, Lloyd, 2010). Of crucial importance according to this perspective is the issue of how people learn to engage with information in practice.

Semi-structured interviews were conducted with ten doctoral students in an interdisciplinary Nordic network for research on communicative product design (Nordcode). The fully transcribed interview recordings were analyzed and categorized in accordance with five focal points derived in synergy from practice theory and the empirical material: activities, power, materiality, agency, and knowledge (see Pilerot, 2014).

The preliminary results indicate that in the setting investigated, information literacy is enacted as a collectively sustained and situated socio-material practice shaped by socially and historically developed conceptions of what it means to be a design researcher.

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Keywords: information literacy, PhD students, interdisciplinary research, practice theory

# **CONSIDERING THE DIGITAL LITERACY IN UNDERSTANDING ESTONIANS' PERSONAL PRIVACY PRESERVING STRATEGIES**

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The aim of the paper is to analyse results of a nationwide Estonian survey to understand how different privacy preserving strategies are used and how the use of these strategies is related to digital literacy.

We understand privacy to be not about secrecy, but about personal control over one's information (Westin, 1967; Solove, 2008). Agency is increasingly difficult to exercise in today's public-by-design online environments, so users need various literacy skills to understand the intricate details of online privacy information. Therefore, people have developed a list of individual strategies to counterbalance the lack of structural support. The actual use and usefulness of such strategies is often a matter of digital literacy. We follow Eshet-Alkalai (2004), according to whom digital literacy is more than the ability to use software or a digital device and includes a variety of cognitive, motor, sociological and emotional skills.

This article is based on a nationwide Estonian survey which focused on perceived threats to people's privacy and their strategies for managing the potentially privacy-invading situations in online settings. The survey was carried out in May and June of 2014 as a face-to-face personal interview with a standardised questionnaire. The final sample included 959 respondents aged 15-74 of whom 83 percent (n=799) were internet users and will be in the focus of this analysis.

The majority of the respondents (86 percent) considered the individual to be responsible for personal data on the Internet, younger people noticeably more than older age groups. Responsibility can be exercised, for example, by being aware of the conditions of use of different services. Half of our respondents claim to read the privacy policy and conditions always or most of the time. It is not only an issue of reading, but also the question of digital literacy, of understanding the implications of what was being read. In our survey, only 20 percent of people thought that their knowledge about data collected and used about them was extensive or good, and the oldest people assess their knowledge to be the most limited.

We listed different personal privacy preserving strategies for respondents and the most popular strategy was a preventive social strategy of limited information sharing (used by 80 percent of the respondents), followed by more technical strategies, such as using security software, different passwords and screen locks. A tell-tale result is the number of respondents not aware of certain strategies – most often these strategies had somewhat complicated technological terminology (encryption, browser, cookies, app, certificate), which are presumably not part of people's digital literacy vocabulary.

People use and develop privacy-maintaining strategies continually, but have different access and amount of skills and resources. Thus, some are empowered to a greater degree, to protect their privacy and apply informational self-determination. Teaching digital literacy skills can be seen as the responsibility of the structure – supporting development of norms and values as well as practical skills is traditionally the role of the school system. However, as our analysis of adult population shows, it is not enough to leave digital literacy only to the educational domain (and definitely not just aimed at the young). Privacy-by-design and usable privacy notices are necessary tools to help those whose skills are not up to the fast-changing pace of technologically saturated life.

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Keywords: digital literacy, privacy, survey, strategies

# THE TEACHERS' DIGITAL LITERACY DETERMINING DIGITAL DIVIDE IN PUBLIC BASIC SCHOOLS IN GHANA

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# **Objectives and Conceptual Framework**

This study explored the role of the teacher's digital literacy (TDL) in determining the Digital Divide (DD)in basic school digital culture (SDC) in Ghana. It investigated the specific TDL variables influencing the DD in schools.

Digital literacy (DL) has become an essential requirement for an individual's economic and social functionality. JISC (2013) described digital literacy as using digital tools skillfully for personal development and excellence. Consequently, schools need defining SDC reflective of contemporary digital trends in education. We propose SDC as interplay between TDL and the other ICT related factors. Consequently, we infer conceptually that school digital culture relates to DD can be measured using ICT related human and material factors prevalent in schools. Fuchs & Horak (2008) discussed DD as lack of mental, material, skills, and usage access in the context of ICTs. Standard rubrics (UNESCO-IICBA, 2012) and the policy document MOE (2008) from Ghana facilitated the design of components of SDC.

# Methodology

A paper-based survey was conducted with teachers and head-teachers sampled from 17 basic schools in various locations. The questionnaire was adopted from the UNESCO-IICBA and EU rubrics for measuring ICT in Education, and explored the interrelation, prevailing disparities and trends of influence in schools-based nine SDC components. Correlation analysis, K-means analysis, Independent-samples T-test and Canonical discriminant analysis were the data analysis procedures used.

# **OUTCOMES AND DISCUSSION**

SDC factors appeared not to be strongly interrelated - there was no significant correlation with the TDL component (f1) and other components. Between the Presence of the school's ICT strategy (f2) and Opinion on using ICT for educational purposes (f6), a weak positive (r = 0.612, p < 0.05); and Training support for teacher's ICT use (f3) and Perceived inhibitors of using ICT in teaching and learning (f4), a weak negative correlation (r = -0.484, p < 0.05) were found. Schools were clustered into two DD groups, with (f1) TDL significantly influencing the disparities. The DD in schools was influenced by TDL (f1) and ICT related policy documents (f2). TDL variables significantly influencing the DD across the district were related with some digital competences (using ICT resources and inspiring pupils to use ICT in lessons) and application of ICT in practice (using ICT resources, using ICT for designing teaching methods, managing their learning environments, communicating with pupils and inspiring them to use ICT in lessons and using ICT for teacher development).

TDL is the key component in determining the DD among the schools; about 50% of schools have not achieved the expected level of SDC. A framework to enhance teachers' DL in the context of other Digital culture components in school is needed.

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Keywords: digital divide, digital literacy, school digital culture, teacher digital literacy

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Is online culture an ethical problem for journalists? Or does it represent the same professional challenges of all journalistic work? What is the difference between being a professional or a semi-professional online user?

My paper deals with the problem of whether the core values of journalist ethics can be sustained in today's changes in information literacy. A pervasive non professional information literacy deprofessionalizes the character of the public sphere. According to Habermas' (1990) theory, the public sphere is a bourgeois phenomenon. The control function of the political actors in a representative democracy has to be exercised by representative citizens - the professional journalists. They embody the bottle neck of control and transparency in a bourgeois society. Thus, they are able to organize public opinion about political reality through a "one to many" communication. And by organizing this new form of mass media communication, journalists "create" a new and specific domain versus the private domain. But today the technical and economical barriers of mass media have been dissolved (cf. Neuberger 2014) as public attention becomes a much more complex and dynamic interaction (cf. Neuman et al. 2014). Everybody - not only the classical public but also the politicians themselves and their publicity workers - can be "produsers" (Bruns, 2006) and actors in the digital public sphere 2.0. I point out in this paper that not being online is the challenge for today's journalism as journalists now function as actors communicating "many to many" through web 2.0. Journalists are losing their classical professional function if every single user can be a "produser". Therefore, the ethical question is whether there are new core values (cf. Elliott 2009) of an ethics of information literacy and whether these new values will assign new tasks for professionals in the public sphere.

I conclude that the ethical standards of a public communication 2.0 must be the standards of the mediatized public in general (Rath 2014) and of a specific new kind of journalism (Kammer 2013; Canter 2014). The new model of interactive journalist is to be a manager of attention. Therefore journalists need high professional information literacy and a new self-image: journalists are no longer "navigators on a sea of facts and news" but "navigators on a sea of interactive offerings".

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Keywords: ethics of public communication, professional journalism, attention, interactive journalism, mediatization

# INFORMATION LITERACY AND ENVIRONMENTAL SUSTAINABILITY CORRELATION IN USING AND COMMUNICATING INFORMATION

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Kurbanoglu and Boustany (2014) divide the way libraries may be green into several subsets: green buildings; green operations and practices; green programs and services; green information systems; green collections and collection development; and green information literacy. In this paper we will focus mainly on the green information literacy aspect through a study from Transilvania University of Brasov. In our information literacy (IL) course, the students from the Faculty of Product Design and Environment were provided with notions concerning the impact of the Internet and accessing information on the environment:

The increasing use of ICT has a significant impact on energy consumption and emissions of greenhouse gases.

It is estimated that a Google search generates one to ten grams of carbon dioxide (CO2) emissions, depending on the time needed and the equipment used, and whether the equipment/computer was turned on or not.

Google estimates several billion searches (about 6 billion in 2013) per day.

Billions of searches are performed daily to find information not only on the Internet but also in library catalogs, databases, institutional repositories, and electronic resources such as books and journals.

An information retrieval system ensures access to information will also consume energy and generate CO2 emissions.

In 2010, Google's total electricity consumption was 2.26 million megawatts.

It is estimated that the internet consumes between 170 and 307 gigawatts of electricity, which is the equivalent of 11-19 percent of the global energy consumption

An ordinary computer operating one day (24 hours) generates 494 kilograms of CO2.

The hosting of 10 megabytes of data generates 2-1/2 kilograms of CO2. The energy consumption of servers and data centers is doubled in five years and the data center infrastructure needs electricity for power and cooling, and such structures can be 40 times more active energetically than the conventional office buildings.

The students responded to an online survey with ten questions. Students responded to questions on the novelty of information, which information sources they prefer, whether finding such information changes their behaviour when searching for information, whether IL can shape a sustainable thinking pattern, whether the skills acquired during the IL course help reduce substantially the carbon emissions and power consumption during information searches, and what time they spend daily accessing the internet.

Ninety-six percent of students consider this information new. Eighty percent prefer both electronic and printed sources. Seventysix believe that IL can influence sustainable thinking to a large extent. IL can be correlated with environmental sustainability by adopting a sustainable approach. Students should become aware of the ecological manner of searching, selecting, using, and communicating information. Data from the survey demonstrated students had high' interest in green subjects and resources and showed a strong correlation between IL and the education of the young generation on sustainable thinking.

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Keywords: information literacy, environment, sustainability, green movement, search strategies

# LIBRARY MARKETING AND INFORMATION LITERACY: HOW NORDIC AND BALTIC UNIVERSITY LIBRARIES USE THEIR FACEBOOK PAGES?

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# **INTRODUCTION AND METHODS**

The marketing literature in the field of library and information science (LIS) shows a development from general discussion, based mainly on the functional aspects of marketing, to research in the form of case studies. Recently, these case studies discussed examples where social media is having an impact on library services and how libraries are using these tools as a mean of marketing services (Chan 2011; Jacobson 2011; Riza Ayu & Abrizah 2011). The focus of our research project, "Baltic and Nordic University Libraries Marketing in Facebook" at the Institute of Information Studies of Tallinn University, was on the usefulness of social networks in the library marketing process.

Librarians as marketers are using their knowledge in information literacy, media literacy, and related fields to implement library messages through social media. The key objectives of our study were to identify how Nordic and Baltic university libraries use their Facebook pages to make the organization and services more visible.

Qualitative content analysis of Nordic and Baltic university libraries' Facebook pages to explore the usage of wall posts, photos, videos, and other applications, as well as the content of the information communicated. We undertook semi-structured e-mail interviews with each library's representatives to find opinions, viewpoints, and attitudes towards marketing in social media. Our pool of respondents included individuals working at two libraries, one multidisciplinary and one technical university library, from each Baltic and Nordic country (Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway, and Sweden).

### **Results and Conclusion**

Thirteen libraries out of 16 created and maintained Facebook pages. Over a given year, the libraries added an average of 83 wall posts. We determined that most of the library pages included a sufficient amount of visual material illustrating their messages. Some created an app for their library e-catalogue or used a blog. Wall posts were mostly about events held in library such as exhibitions, lectures, and training. University libraries are positively minded towards social media since they see it as a supplement to other channels. Social media gives the library a more "human" face. While library's analyse the feedback they receive on Facebook and monitor their increasing number of "fans", they typically have not set concrete goals for their use of social media. Still, Facebook is considered a very important instrument due to its availability, speed, and interactivity, but not as an independent marketing channel.

This study gave an overview of how Baltic and Nordic university libraries have used the potential of Facebook pages for marketing and implementing information and media literacy approaches. Our results should help librarians to analyse the content of their Facebook page and see where the changes should be implemented in order to become an even more effective marketer.

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Keywords: social media, Facebook pages, university library marketing, Nordic university libraries, Baltic university libraries

# LEARNING SCHOLARLY INFORMATION COMPETENCIES IN THE COMMUNITY OF PRACTICE: A CASE STUDY OF Polish Critical Pedagogy Researchers

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The present paper shows the findings of the research I conducted as part of a doctoral project at the University of Lower Silesia from 2014–2015. The aim of the research was understanding how members of a particular academic community learn scholarly information competencies, wherein learning was perceived as a social and cultural phenomenon (Wenger 1998; Lave & Wenger 2000) and, especially, as a practice.

I based the methodology of the research on semi-structured interviews with particular members (three persons) of the community and three focus-group interviews. The community consists of Polish critical pedagogy researchers. My investigations drew on Schatzki (1996, 2001), Lave and Wenger (2000; Wenger 1998) for theoretical and philosophical assumptions of the qualitative data analysis. My understanding of the nature of practice in learning was informed by Schatzki's (1996) concept of social practice. The community of practice and the situated learning concepts formulated by Lave and Wenger provided the main framework interpretation. I have derived methodological inspirations also from Lloyd and Talja (Lloyd 2005, 2012; Talja 2002; Talja & Lloyd 2010) who perceive information literacy as social practice rather than a set of cognitive skills.

My research showed that being a part of the community of practice offers multiple opportunities to learn scholarly information literacy, for example when members bring new competencies (from another community to which they belong) into the group, or when a new member wants to enter the community and opens up to explore and understand its practices. However, at the same time, being inside and co-creating a community does not necessarily entail new scholarly information competencies since the group may hinder including new practices. Practising information literacy usually takes place in non-formal situations. Sharing identity and culture is a foundation of transforming practices that follow changes in the environment.

This issue is widely discussed in behavioural sciences where the authors primarily focus on the competency assessment. My findings, however, show that the theories of practice are more useful in analyzing learning scholarly information competencies.

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Keywords: scholarly information literacy, community of practice, social learning, Poland

# **COPYRIGHT LITERACY OF SPECIALISTS FROM LIBRARIES AND OTHER CULTURAL INSTITUTIONS: LITHUANIAN CASE**

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Science and culture are not only of great importance to the knowledge economy which is based on creating, evaluating and trading knowledge, they are also fundamental to human dignity and autonomy. Legal protection of copyright interests originated in Europe centuries ago at the municipal and national levels. Significant uncertainty still remains on how to resolve the potential tensions between intellectual property laws and human rights internationally (Copyright policy and the right to science and culture, 2014).

The goal of our paper is to identify the level of copyright literacy of specialists from cultural institutions in Lithuania. We studied library, museum, and archive specialists in Lithuania for this purpose.

Our tasks were to establish the knowledge and awareness of the specialists on the issues of the copyright as well as to determine the attitudes of the specialists towards the development and application of copyright policy in Lithuanian libraries, museums, and archives. We gathered input on how university programs in library and information science, archival science, and cultural heritage sciences support the study and continuing education on issues concerning the protection of intellectual property.

We surveyed an international group of researchers in Lithuanian libraries, museums, and archives from January–March, 2015 to assess the level of copyright literacy in these cultural-sector organizations. We paid special attention to how familiar respondents were with international as well as national copyright issues, as well as issues directly related to their institution and the services provided to their users. We asked respondents to complete an on-line survey that we created within the framework of the research project, Copyright Policies of libraries and other cultural institutions that was financed by National Scientific Fund of the Bulgarian Ministry of Education, Youth and Science. We sent surveys to 237 libraries, museums, and archives: 110 libraries of state significance, special, public, and academic libraries; 104 national, state, municipal, departmental, and independent museums; and 23 state and municipal archives. We received a total of 187 completed surveys for a response rate of 79 percent. Our results demonstrated the present situation and degree of awareness of various copyright issues, both national and international, in Lithuanian libraries, museums, and archives.

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Keywords: copyright, copyright literacy, cultural institution, library, museum, archive

# SOCIAL SUSTAINABILITY: NEW APPROACH TO INFORMATION LITERACY

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According to the Library and Information Science (LIS) literature the term "social sustainability" appeared for the first time in 1995. Nolin (2010) indicates that the concept sustainable information refers to resources that either facilitate integration and participation according to three constitutive parts of sustainable development (social, economic and environmental protection), or contribute to the strengthening of the process in which society is transformed according to the ideals of sustainable development. Sustainable information can therefore consist of "information for sustainable development" and "development of sustainable information".

Most research on this theme is focused on information services (green information services) and on environmental impact of information technology (IT) equipment, infrastructure design, development, and implementation of hardware and/or software. However, this is only a small part of the big picture. Nolin (2010) and Chowdhury (2012) mentioned three pillars of sustainability: economic sustainability (economic development); social sustainability (social development), and environmental sustainability (environmental protection). Issues which are interdependent, but also interrelated. The model of sustainability for an information system and service shows that each form of sustainability has its own target and challenges (Chowdhury, 2013).

The social sustainability target is to ensure equitable access, as well as a better and healthier society, which has not been widely explored. Today, social sustainability might have an impact on the environment and on economy. Nine of the thirty-six categories (cultural and community diversity, democracy, education, empowerment and participation, equal opportunity to participate in a democratic society, equitable access to resources and social services, human rights, inclusion, social capital)proposed by Chowdhury (2014) have a close relationship with a democratic society. Democratic societies may be founded on information literacy and civic literacy skills of their citizens (Millner, 2002).

The aim of this paper is to find out a correlation between those elements of social sustainability proposed by Chowdhury, sustainability literacy proposed by Obermiller and Atwood, information literacy, and information services. A survey will be conducted on university students in Mexico to achieve the former objective. This survey will take into account the scale development of Obermiller and Atwood.

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Keywords: social sustainability, information services, information literacy, information policy, democratic society

# FROM WORKPLACE TO PROFESSION: NEW FOCUS FOR THE INFORMATION LITERACY DISCOURSE

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The idea of workplace information literacy has been a long-term contributor to the information discourse. Workplaces have been a key context for researching information literacy and the significance of exploring such context has been highlighted by many researchers. The development of the workplace information literacy research trajectory has been associated with the unique nature of various workplaces. Building on this trajectory, our paper draws attention to the understanding of information literacy within "professions".

In the present paper, we consider the relationship between information literacy in workplaces and professions. We define a profession as a vast community of same-field people such as librarians, physicians, lawyers, or engineers who interact with each other around work at a higher level than their actual workplaces. For instance, librarians of a particular library (in other words, workplace) are considered as part of the library profession due to their interaction with a wider group of librarians outside their organisation. Thus, the professions may be distinguished from workplaces. In this regard, we suggest considering using the term "professional information literacy" as a complementary term besides "workplace information literacy" where the concept of the workspace needs to be extended to cover the unique nature of a profession. In this paper, we will elaborate specifically on professions in which the interaction among individuals occurs in a virtual space. Therefore, virtuality is another distinguishing feature of the profession and the work context discussed in the present paper.

In this paper we question the boundaries of the existing knowledge in information literacy domain based on findings of a recent study into the web profession. Adopting a relational perspective towards the idea of information literacy, this qualitative study introduced four different concepts of information literacy in workplace experienced by web professionals. This is an absolute example of a wok context that extends beyond physical workplace to a professional level and with virtuality as a dominant component. Regarding the outcome of the study, we argue whether the current understanding of workplace information literacy meets the needs of people who share professions, particularly where virtuality is a main property of the work context. We suggest that information literacy researchers should continue to explore understandings of information literacy in professions characterized by virtuality.

In summary, our aim in this present paper is to address what information literacy means in a profession level work context where the dominant interaction among individuals takes place virtually. We draw attention to professionals' experiences of information literacy in such context and reflect upon how the phenomenon of information literacy can be practiced in such space.

We believe that this direction has the potential to contribute to the field of information literacy both in theory and practice. Our understanding resulting from the current paper adds more details to the current image of workplace information literacy through investigating the un-researched area of professional information literacy. Our writing will also shed light on the future development of workplace information literacy frameworks in which information literacy needs of individuals involved in professions will be addressed.

Keywords: workplace, information literacy, profession, web professionals

# **COPYRIGHT LITERACY IN THE UK: RESULTS FROM A SURVEY OF LIBRARY AND INFORMATION PROFESSIONALS**

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This paper reports on a survey of "copyright literacy" amongst librarians and others working in the cultural heritage sector in the United Kingdom. This study is timely following reform of the UK copyright legislation in 2014, but also as an understanding of copyright and licensing issues becomes increasingly part of wider digital literacy support. Librarians are increasingly called upon to provide expert advice for open education projects and initiatives such as Massive Open Online Courses (MOOCs), so arguably have a greater need for an understanding of copyright.

This study is the first of its kind in the UK, although an earlier study (Oppenheim and Woodward, 2004) surveyed a small population of higher education librarians. This survey was distributed far wider and received over 600 responses. It aimed to highlight gaps in knowledge and training requirements in the sector and to provide comparative data to other countries participating in the survey. This research originated from a project funded by the Bulgarian Ministry of Education and Science and presented at ECIL 2014 (Todorova, 2014). The UK survey was part of a second data collection phase, extending the survey to Finland, Hungary, Italy, Lithuania, Mexico, Norway, Portugal, Romania and USA.

The survey aimed to establish the knowledge and awareness of the respondents on a variety of issues associated with copyright and their attitudes towards the development and application of copyright policies in their own institutions. It gathered data about attitudes towards the education and continuing professional development (CPD) of information professionals, including the inclusion of copyright training in professional qualifications. Finally the survey gathered demographic data about the respondents.

Findings suggest that the level of knowledge about copyright across sector is mixed. They back up results from Oppenheim and Woodward (2004), suggesting copyright is a small part of many information professionals' roles. Consequently many respondents expressed a desire to develop their knowledge in this field. Evidence from the UK suggests there is a reliance on colleagues, books, journals, websites and professional associations for guidance on copyright matters. Encouragingly 63 percent of institutions surveyed had a copyright policy and 64 percent had a named individual dealing with copyright queries. Over 93 percent of all respondents believed copyright should be included in the professional training and education of librarians and other cultural heritage sector professionals. Additional analysis will be presented to compare UK responses to other countries.

The findings provide an insight into how those providing copyright support within information, educational and cultural institutions, are best able to deliver the greatest value to users and communities within the UK's new copyright regime. The survey comments are illuminating, suggesting specific topics related to copyright and Intellectual Property Rights (IPR) that are included in professional qualification and CPD for the sector. Finally this paper will present recommendations for further research in the UK.

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Keywords: copyright, digital literacy, UK, continuing professional development, copyright literacy

# Customizing New Library Catalogue for Information Literacy, Digital Collections and Sustainable Development

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Traditionally, academic libraries have spent a lot of time teaching students how to use a library catalogue and versatile digital collections. This has been almost inevitable with many search channels in use, generally with different and rather unintuitive user interfaces. With the new generation web and the next generation of web users, the need for improving online services, especially catalogues, has surfaced. According to Fagan (2010), these new library interfaces, sometimes called "next-generation library catalogs" are often separate from existing integrated library systems and aim to provide an improved user experience for library patrons by offering a more modern look and feel, new features, and the potential to retrieve results from other major library systems such as article databases.

The Finnish National Library started developing the Finna search service as part of National Digital Library project in 2012 (The National Digital Library, 2015). Finna is based on open source software solutions VuFind and Solr and it enables a variety of customization options for organizations using the search service (Föhr, 2013). In 2012, the Information and Library Services at Lahti University of Applied Sciences started developing their own, localized version of Finna, called Masto-Finna, that was released as a beta version in 2013 and as a primary search service in 2014. With Masto-Finna, students can search the library catalogue and digital collections at the same time using only one interface so the amount of time used for teaching technical searching skills can be now used to guide students in source criticism and reference skills.

#### **OBJECTIVES**

Our paper presents the customization process of the Masto-Finna search service, which focused on easy access to digital collections and user-friendliness. We also discuss the effects of a single search interface on the usage of the digital collections and its impact on information literacy teaching. Furthermore, we evaluate the sustainability aspects of digital collections.

# Methodology

We examined the effect of the new search service to digital collection usage based on statistical information. We analyzed the userfriendliness of the Masto-Finna based on the experiences collected from a group of tester and a user survey conducted in 2014. We evaluated the impact on new information literacy teaching using the interview data from Lahti University of Applied Sciences information specialists who use Masto-Finna in their IL classes.

Nevalainen (2014) gathered the data as part of a thesis.

#### OUTCOMES

Our paper discusses the focal points of information literacy teaching in the era of new library catalogues and the environmental aspects of using digital material.

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Keywords: information literacy teaching, VuFind, digital collections, OPAC

# **EVERYDAY LIFE INFORMATION NEEDS AND INFORMATION SEEKING BEHAVIORS**

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Everyday life information is the practical information used by individuals in their lives. People acquire this information as a result of their daily life experiences. It is related to individuals' lifestyle and daily needs and is reflected in their health, work, education, and hobbies (Savolenian 1995, p. 259). A person's lifestyle is associated with how individuals spend their free time, hobbies, consumption behaviors, priorities, and needs. Individuals' hobbies, priorities, and needs lead to the occurrence of information seeking behavior that starts the resolution process for satisfying the information need occurring in daily life. Individuals have different needs that may change in different contexts. Everyday life information has been conceptualized in different studies as reflected in the published literature. In everyday life, information needs occur in a range of events from purchasing a cd, planning a skiing trip, planning a winter work-related trip, repairing workplace equipment, observing projects for work, and buying a lawn mower (Julien & Michels 2004). Individuals satisfy these information needs through a variety of strategies including asking others, approaching the reference desks in the provincial or county public library in their own vicinity, and conducting research on the Internet.

These actions carried out to satisfy everyday life information needs constitute information seeking behaviors, which are associated with information literacy skills. If individuals have information literacy skills, they will be able to access information and use the accessed information efficiently in order to satisfy their information needs. Public libraries are the key institutions providing information for individuals, enabling them to access and use the accessed information. Public libraries should develop information literacy scurses or programs in order to enable their users to acquire and develop their information literacy skills. In this study, we determined the daily life information needs and information seeking behaviors of Ankara Adnan Ötüken Provincial Public Library users. We gave recommendations about a desired structure for information literacy programs/education in the public library patrons in defining their information needs so that they can access the information easily and gain information literacy skills in the information seeking behavior process. We administered a questionnaire to about 70 users chosen randomly at the Ankara Adnan Ötüken Provincial Public Library. We analyzed the results to identify users' everyday life information needs and seeking behavior. Our study differs from other published studies as it not only determines the everyday life information needs and seeking behaviors for effective information literacy program/ education.

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Keywords: everyday life information, everyday life information need, information literacy, information seeking behavior

# INFORMATION-SEEKING BEHAVIOR AND INFORMATION NEEDS OF FARMERS IN TURKEY AND SWEDEN: A COMPARATIVE STUDY

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In today's world, individuals use information as "information workers" and manage information which make them evolve as part of the globalization process (Marchionini, 1995). Information is a practical tool facilitating the life flow of individuals. This tool is used by individuals in order to resolve the problems, uncertainties and chaotic situations in their life. A series of attitudes in target-oriented resolution process is called information seeking behavior (Singh & Satija, 2007). Information seeking behavior and information are interwoven tools creating a circulation serving the target of various information user groups. Farmers are one of the sub-groups using information to contribute to the constitution of a green world. The information they seek in their occupational life will facilitate the daily running of their occupation and serve the green society with fertile products, beneficial and resultoriented solutions. In our study, information seeking behavior and information needs of the farmers in Fethiye, a county in Turkey as a developing country, and Gothenburg in Sweden as a developed country, were analyzed. 60 farmers in Turkey and 60 farmers in Sweden were included within the scope of our study. What kind of information they seek and what kind of searching tools (internet, journals, books, asking people, applying to the reference desks in the public libraries) they use will be analyzed further in our study. Our target group was chosen randomly among the farmers in Fethiye and Gothenburg. It is a comparative study in which findings acquired in two different countries shall be handled taking the country development criteria into consideration. In accordance with the country development criteria, findings will be compared and recommendations will be given. Based upon the acquired findings, recommendations shall be given about the development of information literacy services and programs for the farmers. In our study, a descriptive method was used. A questionnaire was used as a data collection tool.

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Keywords: farmers, information seeking behavior, information needs

# LOOKING FOR CREATIVE INFORMATION STRATEGIES AND ECOLOGICAL LITERACY

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The aim of this paper is to identify creative information strategies for building ecological information literacy as an innovative view on information literacy. Information strategies are information activities that help in information problem solving and sense making, including differences in experiencing information environment. Creative information strategies integrate human creativity with human information behavior based on a balance between domain knowledge and innovations. We ask the following research questions: Can we identify creative information strategies based on information use patterns? Which characteristics of information strategies form ecological information literacy? How can information science support creative information strategies in research practice?

The study is framed within the concepts of creativity and phenomenographic research of information literacy. (Bruce, 2013). Creativity is determined as the production of new and original ideas or products. Creative information behavior of research workers is marked by uncertainty, relevance and intuition (Anderson, 2010). Information search process, uncertainty and creativity in guided inquiry were explained by Kuhlthau et al. (2007). Several empirical studies of information literacy and learning identified patterns of information use (for example: Limberg, 1999; Lupton, 2008; and Steinerová, 2014). Limberg (1999) identified the information patterns as fact-finding, balancing information and scrutinizing and analyzing. Patterns of experiencing information use and learning were empirically determined by Lupton (2008) (sequential, cyclical, and simultaneous). We identified three information use patterns: evolutionary, interactive, and sequential (Steinerová, 2014). Commonalities and differences of patterns are considered for identification of creative information strategies and ecological information literacy as metalliteracy. Methodology of the research is based on meta-analyses of three empirical studies, namely the qualitative studies of doctoral students, studies of researchers and information professionals as part of information ecology of the academic information environment, and a PhD. thesis on information creativity in digital environment based on surveys of 255 scholars, artists and information professionals in Slovakia (Kropajová, 2014). Information professionals and scholars applied mainly analytical information strategies; artists used holistic creative information strategies. Concept modeling is used for exploring ecological information literacy.

Findings present conceptual models of creative information strategies including process-oriented, knowledge-oriented and interactive strategies. Factors of ecological literacy are considered and ecological information services adapted to creative information strategies are proposed. A model of creative information strategies is outlined and main supportive strategies, such as conceptual structuring, conceptual exploration, and conceptual navigation are determined. For creative strategies in research work we propose such ecological features as pattern recognition, analogies, associations, metaphors, visualization, re-use of research data, clustering and knowledge discovery.

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Keywords: creative information strategies, ecological literacy, information use patterns, concept modeling

# A Social Epistemological Approach to Authority in the Framework

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The latest Framework for Information Literacy for Higher Education (2015), propounded by the Association for College and Research Libraries (ACRL), states:

"Information resources reflect their creators' expertise and credibility, and are evaluated on the information need and the context in which the information will be used. Authority is constructed in that various communities may recognize different types of authority. It is contextual in that the information need may help to determine the level of authority required" (p. 5).

According to this statement, authority is relative to community, and can vary from one community to another. There can, then, be bias and prejudice introduced under claims of expertise and authority. In this proposed paper the argument will be presented that the above does not define authority at all. The position taken here is that authority is objective and can be assessed with regard to truth claims made by writers and speakers. The state of authority is, in actuality, determined in a social epistemological manner; the community of knowledgeable individuals is able to evaluate the truth conditions of what is said or written. We will be drawing from Goldman's veritistic social epistemic conception as opposed to the sociological foundation of the current Framework.

A problem that is inherent in the Framework is the relativism that pervades the "Authority" standard. It is stated, "Learners who are developing their information-literate abilities develop and maintain an open mind when encountering varied and sometimes conflicting perspectives" (2015, p. 6). This paper will address that relativism and suggest a firmer foundation for a social epistemological for authority based on a particular definition of truth. What is actually required of information-literate individuals is a critical acumen that enables them to ascertain the differences between truth claims based on normative factors. The need does not disregard the place of the social in such determination; on the contrary, social epistemology plays a major role in the acceptance of some statements over others.

While the Framework values granting authority on the basis of belief, a social epistemological approach grants authority on the basis of veritism (Goldman, 1987). Goldman's veritism (1987) contains multiple standards, reliability, power, fecundity, speed, and efficiency. In line with Barnes and Bloor (1982), beliefs such as those mentioned by Goldman, cannot be evaluated in terms of rationality. More simply put, a truth linked framework is a necessary component in such an essential document as the Framework, which guides the integration and teaching of information literacy as recognized learning outcomes at institutions of higher education. This is because truth is implicit in the very process of intellectual inquiry, a component of the production and dissemination of knowledge, a pursuit of higher education and is, in fact, the notion of intellectual aims and assessment.

The central aim of the paper is to present an alternative framework of authority. Authority established by means of one's set of belief does not permit the degree of critical thinking and self-reflection that information literacy presupposes. While the Framework values granting authority on the basis of belief (which may be false), a social epistemological approach grants authority on the basis of veritism (Goldman, 2002).

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Keywords: information literacy, social epistemology, veritism, authority

# **EXPLORING THE EVALUATION OF SOURCES IN THE Immigration Debate: A Mixed Methods Study during the Scottish Independence Referendum**

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Information is available through numerous sources and comes to people in a variety of formats and media, thus posing "challenges for individuals in evaluation and understanding" (ACRL, 2000). The element of evaluation is perhaps the most challenging (and important) of IL (Information Literacy) skills. While evaluation may require individuals make a judgement based on the value of a source (in terms of authority, credibility, accuracy, and reliability), there are many elements that impact the perceived value of a source (Christie, 2007; AASL, n.d.). As IL enables critical discernment and reasoning, these skills assist people in identifying and accessing information as well as making informed decisions on issues of public concerns such as immigration (Julien & Hoffman, 2008; Williamson, Qayyum, Hider, & Lu, 2012). Both mainstream and alternative media sources are used as delivery systems for information of public concern. In the United Kingdom, one of the largest areas of public concern is immigration, particularly in the debate on Scottish independence as immigration is an area of devolved policy which would have been granted to Scotland if the referendum were voted in. This concern regarding immigration is perpetuated through the mass media, and is described as being based more on perception than reality (British Future, 2013). While there are many elements which influence how people evaluate information and form opinions, the media creates a framework from which people make sense of many phenomena.

This paper presents the findings of a mixed methods study conducted in the Scottish Highlands. The purpose of this study is to understand the influence of the mass media on public opinion and how individuals establish authority of information sources. This research is less interested in *how* the media influences, but rather, *if* the media is a key influencer of opinions at such a pivotal time in Scotland's history. Key research questions in this study include: How is the topic of immigration presented by the mass media in Scotland? What sources inform public opinion of migrants? How is authority of information sources established?

This study was implemented in two phases, starting with a content analysis of national newspapers in Scotland to understand what information was being communicated via the media to the public on the topic of immigration. A second, qualitative phase was conducted to explore how public opinions of immigration in Scotland are created and influenced. This includes exploring sources and methods used by Scottish host communities to locate, evaluate, and use information on the topic of immigration during the Independence debate. This exploration of information (and media) literacy is unique as it considers both the sociocultural and historical context in which sources are evaluated and used to aid in the development of opinions on areas of public interest.

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Keywords: information literacy, media literacy, mixed methodology, national identity
### Understanding and Use of Information Literacy in the Industrial Project Management

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Research and development projects are one of the most important ways of implementing new technologies, services and products inside a company, in its production, and in collaboration with other companies (Šumiga, 2013). Short development times, high technical demands, and pressure to achieve milestones are just some of the issues that a project manager needs to work on daily. There are different tools and applications available to help and support management of a particular project, regarding: ways of project team collaborations/meetings; organization of project documentation (notes of project team meetings, meetings with customers, technical documentation, etc);' project status and overview; and information exchange. With all available commercial tools the information management seems simple; however, it becomes complex and challenging in real industrial situations.

The contribution will present an example of transferring information literacy competencies from a PhD academic environment into the industrial environment in the field of polymeric chemistry (Boh Podgornik & Šumiga, 2013). In addition, the results of a study including research, collection, ranking and testing of available tools for project management of projects in the field of injection molding will be presented, with exploration of methods and techniques for problem solving: from brainstorming to the TRIZ system (Altschuler, 2004).

The experiences gained through leading projects in an industrial environment with awareness of the importance of information literacy will be presented and discussed, including some recommendations for project management:

Project documentation should be transformed to the "knowledge database of the company";

Process of "the right" information transfer inside the project team needs to be controlled;

Transition from "traditional" problem solving to inventive solving of problems;

People competences should be constantly upgraded.

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Keywords: information literacy, project management, industry, injection molding, systematic approach

### Students' Reading Behavior: Digital vs. Print Preferences in Portuguese Context

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The aim of this paper is to present the main Portuguese results from a multi-national study on reading format preferences and behaviors from undergraduate students from Polytechnic Institute of Porto (Portugal). For this purpose we apply an adaptation of the Academic Reading Questionnaire previously created by Mizrachi (2014). This survey instrument has 14 Likert-style statements regarding the format influence in the students reading behavior, including aspects such as ability to remember, feelings about access convenience, active engagement with the text by highlighting and annotating, and ability to review and concentrate on the text. The importance of the language and dimension of the text to determine the preference format is also inquired. Students are also asked about the electronic device they use to read digital documents. Finally, some demographic and academic data were gathered.

The analysis of the results will be contextualized on a review of the literature concerning youngsters reading format preferences. The format (digital or print) in which a text is displayed and read can impact comprehension, which is an important information literacy skill. This is a quite relevant issue for class readings in academic context because it impacts learning. On the other hand, students preferences on reading formats will influence the use of library services. However, literature is not unanimous on this subject. Woody, Daniel and Baker (2010) concluded that the experience of reading is not the same in electronic or print context and that students prefer print books than e-books. This thesis is reinforced by Ji, Michaels and Waterman (2014) which report that among 101 undergraduates the large majority self-reported to read and learn more when they use printed format despite the fact that they prefer electronically supplied readings instead of those supplied in printed form. On the other side, Rockinson-Szapkiw, et al (2013) conducted a study were they demonstrate that e-textbook is as effective for learning as the traditional textbook and that students who choose e-textbook had significantly higher perceived learning than students who chose to use print textbooks.

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Keywords: academic reading, print reading, digital reading, college students, Portugal

### FROM INFORMATION LITERACY TOWARD INFORMATION ILLITERACY

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### BACKGROUND

Today's modern society is characterized by a strong technological progress. This affects the processes of personal knowledge acquisition and sharing of information between members of modern societies. Therefore, as an important issue arises, the concept of information literacy allows individuals to fully participate in today's developed society, since many of them are professionally dependent on using these types of skills and knowledge as well.

### **GOALS OF THE RESEARCH**

The objective of this paper is to explore the concept of information literacy in relation to the constant changes in technology, communication channels and habits. The paper examines the causes of the constant need to teach information literacy to already information literate people, and the implications of the current situation.

### Methodology

In this paper, the desk research of publicly available data and literature on information literacy and planned obsolescence will be applied. The method of qualitative analysis will be used, while the results will be interpreted by causal-inductive method (the method of agreement). After that, the synthesis and the descriptive method will be used to define the nature of the relation between the concept of information literacy and the constant changes in technology, communication channels and habits.

#### FINDINGS

The research will show that new releases of computer programs (software) and devices (hardware), as well as new models of communication tools and channels, services, professional measurement devices and techniques have a significant role in creating information illiteracy in already information literate people.

### IMPLICATIONS

The findings of this work will help to better understand the nature of the information literacy phenomenon in modern society. The results will show that the current situation has huge implications for already literate people. Besides adopting new knowledge and skills related to their professions, they are also forced to master new releases of ICT programs and devices all over again. They need to continuously renew information literacy in order to use "smart" devices for everyday life or for their lifestyle.

On the one hand, the causes for the current situation are linked to, e.g., a social concept of sustainable development. On the other hand, the causes are directly linked with the industrial concept of planned obsolescence. This latter concept has a direct impact on the ever faster obsolescence of skills and information literacy. In such a way this process increasingly creates information-semiliterate or even illiterate people from those who were, until recently, completely information literate and so were fully included in society.

Keywords: information literacy, information illiteracy, technology, planned obsolescence

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### **OBJECTIVE AND VALUE**

The study conducted by Virkus (2011) found that one of the dominant features of successful development of information literacy was effective leadership and good management. Although leadership and management have received some attention in different frameworks and guidelines and by some authors and there is an increasing interest in leadership in the library and information profession (Roberts and Rowley, 2008; Rowley and Roberts, 2009), it is not an issue which has received much attention in information literacy (IL) research. The focus is more on how to secure management support within universities rather than how to demonstrate influential leadership in libraries. Roberts and Rowley (2008) highlighted that both public and academic library sectors are concerned with leadership and there is also a suggestion in the literature that senior library staff are not necessarily always ready for leadership. Mullins (2005) concludes that leadership qualities are scarce, with senior managers focusing too much on library skills and not enough on leadership. Both Mullins (2005) and O'Connor (2007) suggest that the library and information profession has been too "narrow", too focused on "the ordinary and the mundane", and that staff need to consider the intelligences that they require to pursue their work and lives, and to succeed as leaders (Roberts and Rowley, 2008, p.8 as cited in Virkus 2011).

It was found that good leaders and managers are required to develop IL policies and strategies, to make a difference, to build efficient teams, inspire and support these teams, and to be able to achieve objectives. Leadership can influence the establishment of good collaboration and partnerships, the initiation of IL programmes and courses, the image of the library and librarian, the organizational and library culture, staff development, and research. A critical role for leaders and managers is to support the development process with new ideas, themes and projects. These individuals are important at various levels of the university and could enormously influence the development of IL (Virkus, 2011). Therefore a study was designed to investigate the views and understanding of top and middle managers on their activities and competencies in academic libraries.

#### METHODOLOGY AND EXPECTED OUTCOMES

The researchers take a constructivist approach and use grounded theory methodology in this study. Semi-structured interviews are used for data gathering. The interviewees are top and middle managers of seven Estonian academic libraries. The number of participants is 60-65 top and middle managers.

The authors will present an overview of how IL and leadership is discussed in the library and information science literature, and selected results of this research project.

Selected Results of the Study

The term "information literacy" is rarely used by managers of Estonian academic libraries when they talk about their role and competences. However, both top and middle managers mention skills that are part of IL, for example, information search skills, information analysis and communication skills while talking about their everyday work.

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Keywords: information literacy, leadership and management, academic libraries, grounded theory

### Scientific Literacy and Its Role in Students' Academic and Professional Development

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#### INTRODUCTION

Science and technology influence our lives, both in professional and private sphere, because our society is dominated and even "driven" by ideas and products from science and technology (Sjøberg, 2001). Because of that, modern society needs individuals with science and technology qualifications at the top level as well as a general public with a broad understanding of science and technology contents, methods and as a social force shaping the future (Sjøberg, 2001). Such individuals would be considered scientifically literate.

### SCIENTIFIC LITERACY

Scientific literacy is the knowledge and understanding of scientific concepts and processes required for personal decision making, participation in civic and cultural affairs, and economic productivity (National Science Education Standards, 1998). Scientifically literate persons possess knowledge and skills such as the capacity to use scientific knowledge, to identify questions and to draw evidence-based conclusions in order to understand and help make decisions about the natural world and the changes made to it through human activity (Pisa 2015 draft science framework, 2013). Furthermore, scientific literacy will help them in personal decision-making, participation of individuals in civic and cultural affairs, and economic productivity (Turiman, Omar, Daud & Osman, 2012).

Scientific literacy consists of four interrelated aspects: recognizing life situations involving science and technology (context); understanding the natural world on the basis of scientific knowledge (knowledge); demonstrating competencies that include identifying scientific issues, explaining phenomena scientifically and drawing conclusions based on evidence (competencies); and, indicating an interest in science, support for scientific inquiry and motivation to act responsibly towards natural resources and environments (attitudes) (PISA Assessing Scientific, Reading and Mathematical Literacy: a Framework for PISA 2006). It also includes competencies to: explain phenomena scientifically; evaluate and design scientific enquiry; and interpret data and evidence scientifically (Pisa 2015 draft science framework, 2013).

#### Research

Competencies like these are the focus of the research study about the role of science and scientific literacy in the academic and professional development of students at the Faculty of humanities and social sciences in Zagreb, Croatia. A survey will be used as the principal method in this research because it is an adequate method for collecting data from a large number of research participants. To discover this matter further, an online survey will be created and this paper will present the results of that survey. The objective of the research is to collect data which would then become input for the development of a future academic course which would introduce concepts of modern science including e-science and open science to students in order to create the capacity of application of scientific principles and methods in academic and non-academic contexts.

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Keywords: scientific literacy, higher education, Croatia, student academic development, student professional development

### DIGITAL LITERACY FOR SCHOOL TEACHERS: A Participatory Approach

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This paper demonstrates how a participatory methodology was used to enhance school teachers' digital literacy capabilities, especially the ability to "*study and learn effectively in technology rich environments*" (JISC, 2014, p.1) and also evaluates the effectiveness of this approach. A face-to-face workshop and six-week online Moodle course were devised to achieve this. At the end of these interventions a list of online tools was created, analysed and reported. Project deliverables are freely available via the AMORES website www.amores-project.eu/results.html . AMORES is funded by the EU Life-Long Learning programme.

Using a constructivist approach (Driscoll, 2005) it was envisaged that teachers would improve their ability to help pupils create e-artefacts that would enhance their digital literacy and enjoyment of reading. A mixed methods approach was employed: qualitative data gathering for the user-needs analysis and teachers' views, and quantitative measures for activity on Moodle. Evaluation questionnaires investigated how teachers felt about the project, what they had learnt and how they would improve it for teachers beyond the project. Web-analytics were used to track activity within Moodle.

Before the delivery of the workshop, school head-teachers were sent a user-needs questionnaire to establish which digital tools were employed in their classrooms and indicate where teachers' skills levels currently stood. This enabled researchers to plan the workshop and online course. Discussions were framed around which digital skills teachers would need to facilitate digital collaboration and creativity in literacy with their pupils.

The teachers' face-to-face workshop (2.5 days) was held in the UK (Walton, Hetherington & Childs, 2014). The essence of a participatory approach is to place the participants as experts within the research process (Tavares, Hepworth & De Sousa Costa, 2011). In this workshop teachers identified a revised and extended a list of online tools that they wanted to learn more about in the online course. Ten teachers, two from each of the AMORES project partnership schools from Croatia, Denmark, Poland, Sweden and the UK participated. The online course was created in Moodle and designed to last six weeks. The constructivist approach to learning enabled online discussions which generate shared meaning and agreement. Teachers learned about a variety of new online tools including creating video e-artefacts, cartoons and running videoconferences.

A detailed, in-depth analysis of the data gathered will be given which shows that teachers found some aspects of the online course more valuable (creating videos and online cartoons) than others (learning about the Edmodo social media tool). This was corroborated by the metrics which tracked Moodle activity. Overall, teachers felt that their digital literacy skills had improved during the workshop and online course. In the next project phase, teachers will work with their pupils to create e-artefacts to share with fellow students in other countries.

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Keywords: digital literacy, EU perspective, schools, participatory research, teachers

### MAPPING COLLECTIVE INFORMATION PRACTICES IN THE WORKPLACE

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This paper will present results from a research project that took place in two academic libraries between June 2013 and February 2015. The basis of the project is its investigation of how members of communities of practice collectively manage, or "steward" (Wenger, White & Smith, 2009) their informational resources - or information landscapes (Lloyd, 2010) - in a context of significant change. In this setting, information literacy is considered the basis of practice (Lloyd, 2012), something that is collectively developed among members of the workplace community, in ways that distribute authority over information practice (Whitworth, 2014). The project uses an innovative group concept mapping method. Six concept mapping sessions were held over one year, with 10-12 participants at each location, using the tool Ketso (www.ketso.com). In each session, participants were asked to map elements of their information landscape that included the tasks they were working on, information needs, potential sources, problems and blockages, priorities, and actions to be taken after the session. Each subsequent session then began with a review of the actions and whether they had been attended to or not, then a review of the map itself, altering and adapting it to reflect changes in the landscape since the previous session. This method generates data about information landscapes and information practices at two levels. From the "external" research perspective the concept maps summarise information about the distinctive landscapes of each setting, and record how elements of the landscape, such as information needs, sources, blockages, priorities and actions evolved over the course of the project. But these data are also immediately available to the staff members, through their participation in the project. Thus, the mapping process is itself a way that the participants can learn about elements of the landscape and participate, as a group, in the continual process of stewarding the landscape. We observe that in certain areas of practice, staff members with certain expertise and/or formal responsibility manipulate the relevant area of the Ketso map, but the process allows their expertise to be scrutinized by others, and collective understandings reached about these areas of work. Thus, we propose that this mapping method may constitute a way in to investigating an as-yet-unresolved problem in information science – that of whether, and how, groups make genuinely collective judgments about the relevance of information (Saracevic, 2007). Evaluations of the project also suggest the method constitutes a way of distributing authority over information practices across members of a community, thus, is one way of operationalizing the idea of radical information literacy.

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**Keywords**: radical information literacy, information practice, workplace, communities of practice, authority, mapping, information landscapes

### MEANINGFUL IMPLEMENTATION OF GAMIFICATION IN INFORMATION LITERACY INSTRUCTION

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With the emergence of information and communication technology, today's society has to cope with new structures and regularities. This new era requires society to be equipped with skills like information literacy to survive in the 21st century. Considering the rapidly changing landscape, institutions in higher education have to meet these requirements. A concept that is considered to provide an interactive and stimulating learning environment that satisfies the needs of the new generation of students is gamification (Lee & Hammer, 2011). Gamification means the use of game elements in non-game contexts to drive motivation and enhance the learning process through feedback cycles and meaningful application of the content. Therefore, "The Legend of Zyren" was initiated in 2013 as a project to gamify a course on Information Literacy Instruction for Bachelor students of Information Science at the University of Düsseldorf. In addition to a classic lecture, the students engage in an online textbased adventure and a gamified practical session in which they have to solve quests alone or in groups. These quests include the actual learning content and are constructed to increase motivation and commitment and support content mastery in terms of knowledge acquisition, knowledge consolidation, knowledge application and focused learning. After a successful implementation of the prototype (Knautz, Orszullok, & Soubusta, 2013; Knautz, Wintermeyer, Orszullok, & Soubusta, 2014), the gamified platform was redesigned based on the first evaluation outcomes. Gamification always targets triggering and shaping a certain user behavior through the implementation of game elements. Hamari, Koivistio and Sarsa (2014) outlined motivational affordances, psychological outcomes and behavioral outcomes as three dimensions inherent to any gamified implementation. To test whether the gamified application works and results in the desired outcomes therefore requires detailed observations of all dimensions. The contents of information literacy instruction, which have been implemented into the gamified setting, are therefore analyzed with regard to their psychological and behavioral outcomes in terms of motivation and enhancement of learning attitude. An online survey with a total of 96 participants was conducted to evaluate subjective and objective outcomes at the end of the semester and estimate the effect of gamification on the students' performance in information literacy instruction. The results demonstrate that using the new gamified learning environment for information literacy instruction improves students' content mastery, personal engagement, and the ultimate learning success. Students stated that they have been more motivated during the semester and perceive an enhancement of content mastery with a special regard to knowledge acquisition, knowledge application, knowledge consolidation and focused learning. Furthermore, it was noteworthy that students rated game elements that were directly bound to the non-gaming context and were more likely to internalize goals and regulations that were bound to these elements. Out of 79 students who participated in the final oral examination, 89.87% passed and the results prove that top-scorers, meaning students who were more engaged in the game on the online platform, were able to achieve significantly better results in the final exam that tested their skills in information literacy.

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Keywords: information literacy instruction, gamification, affordances, gameful design, higher education

### FIELD-Specific Information Needs of Doctoral Students in Psychology. A Comparative Study

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### **OBJECTIVES**

The purpose of this four-stage exploratory study (performed between February 2015 and June 2016) is to investigate the information needs of doctoral students in the field of psychology. The research will seek to identify main information challenges and problems of doctoral students in their research process.

There will be three participant institutions: University of Warsaw (Poland), University of Lille 3 (France), and University of California, Berkeley (U.S.A.). The study will investigate information literacy (IL), the concept of methodological literacy of Steinerová (2013) as well as information behavior, and use of social media in science (recently named Science 2.0). The study will focus on a sample of approximately 20 respondents from three sub-areas of psychology (affective, cognitive, and social psychology). These sub-areas are common for the three universities. The latter approach will allow us to define better the field specificities.

### Methodology

To fulfill the research purpose, qualitative methods are found to be the most appropriate. Methodological triangulation will be developed using electronic survey, in-depth semi-structured interviews, and observation.

### **COMPARATIVE RESEARCH**

Comparative research plays an important role in the humanities and social sciences. It helps identify best practices and best solutions across different countries. It can also be a preliminary step towards the development of theories (Teichler, 2014). The comparative empirical study opens up the horizon for the analysis of the role of IL in doctoral research support. In the case of this study, the participating institutions represent different societies, languages, and cultures. After the introduction of the Bologna Process in 1999 and establishment of the European Research Area, European countries have often been considered as a single case in scientific studies. Hence, it was decided to include more than one case and broaden the research using two European and one U.S. institution.

Cross-country data will be presented with explanations of their respective context. Data analysis will be also preceded by a review of doctoral education system in each country and in each participant institution.

### **EXPECTED RESULTS**

In 2015 the author will analyze and present the study among Polish and French doctoral students in the field of psychology. The study will compare how PhD candidates handle their retrieved information, obstacles they meet, and choices they make while searching for information.

This study will define needs, draw conclusions and offer suggestions for further action for both researchers and university staff interested in IL support for doctoral students. This comparative project will lead to follow-up activities and have visible impact on IL research. It will provide an international view of IL.

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Keywords: information literacy, information behavior, information needs, doctoral students, comparative study

### INFORMATION PROBLEM SOLVING INSTRUCTION IN HIGHER EDUCATION: A CASE STUDY ON INSTRUCTIONAL DESIGN

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Information problem solving (IPS) is the process of locating, selecting, evaluating, and integrating information from various sources to fulfill an information need (Brand-Gruwel, Wopereis, & Vermetten, 2005). In academia it is central to performing literature reviews in research projects. Conducting a literature review is a complex academic skill that takes many hours to master and, therefore, deserves a prominent place in curricula in higher (academic) education. This paper presents a case study on effective instruction for learning such "IPS-skill". The study's aim is to show that a "holistic" approach to instructional design –a so-called "whole-task model" – is suitable to design effective instruction. In order to reach this aim, we explored students' perceptions of the quality of a premaster course on how to perform a systematic literature review. Additionally, we assessed each of the constituent skills necessary to perform a literature review after course completion.

### Метнор

Students (n=49; 8 male) of the premaster Educational Sciences of the Open University of the Netherlands followed a 4.3 EC online course on conducting a systematic literature review. The Four-Component Instructional Design model (4C/ID-model; Van Merriënboer & Kirschner, 2013) was used to design the course that consisted of five learning tasks ("whole tasks"), each emphasizing a specific phase of the process of reviewing literature. These tasks were designed according to the completion strategy. This instructional strategy sequences learning tasks from worked examples, via completion tasks with incomplete solutions that must be finished, to conventional problems that must be solved. The completion strategy is an example of fading support as learners acquire more expertise (i.e., scaffolding), and has been found to have positive effects on inductive learning and transfer. The final learning task served as assessment task. After the course the students were asked to fill in the SEIN questionnaire (Westera et al., 2007) which records student perceptions of course quality (e.g., studiability/study feasibility).

### **Results and Discussion**

Analyses of the SEIN questionnaire revealed that the students' perceptions of course quality were positive. For instance, students valued the course 7.44 (SD=0.94) on a scale from 1 to 10. About 98 percent of the students valued the scientific level of the course as high. About 81 percent of the students found the course well-structured and challenging. A high percentage of the student population (about 40%) spent more than the estimated study time (120 hours) on the course, which indicates that a whole task approach to learning also requires time-management skills. Results on the assessment task revealed that students had difficulties with defining a research problem, formulating a research question, deriving appropriate search terms, and synthesizing information (i.e., writing a product). Despite these problems all students managed to complete the learning and assessment tasks in an adequate way. Based on the results it seems that a whole task approach to the design of instruction for learning how to conduct a systematic literature review is promising.

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Keywords: instructional design, information problem solving, completion strategy, whole-task model

### **CREATION AND IMPLEMENTATION OF INTERACTIVE MODEL FOR TRAINING OF ACADEMIC AUTHORS IN HOW TO PUBLISH SUCCESSFUL RESEARCH PUBLICATIONS**

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Research reliability and innovation policy deriving from the program Horizon 2020 requirements are aimed at the integration of the processes and their self-assessment, monitoring, and result measurement, together with the ethical and social impact -- direct and indirect -- on the economy and the society. There is a need to create in this field dynamic methodologies and models driving toward new ways and formulated approaches which will enable publishing efficiency, fully covering the scientific achievements which produce tangible benefit. The authors of this paper find that the implementation of interactive applications, training and modelling of the standards will meet this need. The main goal is to create a new working model for covering impact indicators in the research fields of the Bulgarian academic publications where Bulgarian authors publish. Therefore the article proposes a matrix for competencies' assessment and improvement of the authors of research papers. The model evaluates and offers interactive tools for: information search, investigation and management and for carrying out of research reports. It integrates an interactive tool for training of publishers, authors, and students for successful publishing in influential Bulgarian and foreign scholarly journals, demonstrating the ways in which scientific works, articles, dissertations, monographs, research announcements etc. of high quality are published. There is a task to stimulate research in conformity with the requirements for sustainable growth, digitization and the European cultural and educational policies for the establishment of cultural and historical scientific heritage with worldwide impact. The model is oriented towards the target groups of the researchers – professors and associate professors, assistants, graduate students, research teams from educational and cultural institutions - who may freely take advantage of the easy interactive tools with vast coverage. The methodology is in two main directions: (1) the field of interdisciplinary science metrics' modelling of the processes of distribution of research papers in the scholarly publications integrated in a system for improvement of the impact of the scientific publications; (2) in the field of the informing, consulting, training in theory and practice of the target groups. The expected result is to obtain measurement of the research and to compare the expected impact on the scientific results with the achieved results based on the implementation of the model. This paper was made possible thanks to the opportunities provided by a scientific research project entitled "Redesign of Academic Journals in Accordance with Impact Factor Indicators and Benchmarks for Achieving the Smart Growth in Modern Society of Knowledge" under Contract № 02/2 K DFNI of 12.12. 2014 of the Fund "Scientific Research" of the Ministry of Education and Science of Bulgaria.

**Keywords**: applied-science products, impact factor, indicators, innovative strategy, intelligent growth, interactive model, interactive training, knowledge society, redesign, science-metrics

### **EVALUATION OF DESIGNING INFORMATION LITERACY FOR HEALTH PROFESSIONALS IN THE UNIVERSITY OF OSLO MEDICAL LIBRARY: USER'S PERCEPTIONS**

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Evidence Based Medicine has replaced traditional medical practices in medical research and patient care. Using the latest available evidence effectively in clinical decision-making has become inevitable goal (Uysal & Ucak, 2013). Medical librarians are influential in developing information literacy programs for their patrons in order to empower them in practicing Evidence Based Medicine. Information literacy sills of their patrons given the rapid changes in the way information is managed and communicated and this led librarians to advocate for self-directed learning (Vassilakaki & Moniarou-Papaconstantinou, 2015). Information literacy programs and initiatives are of interest to librarians who are the key players in teaching and guidance.

The University of Oslo medical library provides courses about primary library resources, reference management tools, literature search techniques in Evidence Based Medicine, and critical appraisal of scientific articles. The courses are planned to increase users' information searching skills and support them to find the best evidence and information available in various databases. It is important to understand the perceptions of health professionals towards information literacy programs offered by library. Therefore, my study aims to explore the needs, expectations and perspectives of health professionals towards existing information literacy courses by the medical library.

The purpose of my study is to reinforce librarians' understanding of users' demands to improve information literacy programs so that they are effective for health professionals. I used a web-based questionnaire as a research instrument to collect the data. I sent a link to the questionnaire to all employees at university hospitals. I designed the survey to reveal users needs, preferences, and expectations of information literacy courses. The questions reflected the qualitative nature of my interpretation. At the same time, I analyzed course evaluation/feedback forms from the users. I analyzed feedback from evaluation forms received between January to December 2014 in addition to the survey questionnaire. The study revealed concrete information that will help policy makers, professionals and librarians develop information literacy programs in the health sector based on reality. In addition, there is a burning need to increase the awareness of health professionals regarding the information literacy courses offered by the library.

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Keywords: information literacy, medical library, evidence based medicine, health professionals

## PAPER OR ELECTRONIC: PREFERENCES OF SLOVENIAN STUDENTS

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#### INTRODUCTION

Observations of many teachers are that digital media is about to prevail over printed materials. However, several studies of students' reading format preferences show that most of them still prefer print format over digital, feeling their comprehension and retention are greater when they read their assignments in print, but liking the convenience and accessibility of electronic (Mizrachi, 2015). This is relevant to libraries, providing resources and struggling to balance between electronic and print items, and to teachers who wish to make readings as accessible as possible, but question the pedagogical effectiveness of digital format. We present the Slovenian part of results of an international study (including 26 countries) replicating the study by Mizrachi (2014) at UCLA to see whether students' reading format preferences vary or remain consistent across multi-national student populations (Mizrachi, 2015). Most previous research on this topic was performed in English speaking environments.

#### **OBJECTIVES**

We investigate student preferences of academic readings regarding format of material (print or electronic) and factors which impact these preferences and behaviour, Due to good experiences from previous international collaborations (e.g. Todorova, et al., 2014) the same approach has been adopted: a survey in different countries The main research question of this study is: *What are students' format preferences when engaging with their academic readings?* Secondary questions ask: a) *What factors impact their preferences and behaviors;* and *b) How do these factors impact their behaviors?* We target students of different areas and levels; in Slovenia students of three public universities (U. of Ljubljana, U. of Primorska, U. of Maribor) of all levels of study in the following areas: LIS, translating, psychology, geography, engineering, and fine art & design.

#### Methodology

All participants use the same methodology: online survey with 25 questions (17 Likert-scale)covering reading format preferences, behaviors and attitudes, and devices used to read electronic texts; also six demographic questions, and a prompt for open-ended responses/comments. The survey was open for three months (March 11-May 13).

#### OUTCOMES

The results show that students still prefer to read their academic readings on paper, often printing out the electronic materials. Certain particularities were noticed, for example that they first read on the screen and then print the materials if judged important. Many emphasize that preferences depend on the content, type of material. Some combine on-screen reading with making written notes while some only print shorter materials. Printed academic materials are useful because they enable better focusing and can be highlighted; this activity is considerably less practiced with electronic materials. Language of the material does not play a role in deciding between print or digital format.

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Keywords: academic reading, students, preferences, paper materials, electronic materials, Slovenia

# **DOCTORAL PAPERS**

### INFORMATION LITERACY INSTRUCTION METHODS FOR LOWER SECONDARY EDUCATION IN FINLAND

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A new version of Finland's National Core Curriculum for basic education was published in 2014. It introduces and emphasizes the learning goals of *multiliteracies*. Multiliteracies are defined as competences associated with acquiring, interpreting, producing, and evaluating a variety of texts in different situations and in different formats for different tasks and with different tools. (OPS2014.) By definition, multiliteracies strongly overlap with *information literacy* (IL).

Essay-type assignments that require independent acquisition and use of information sources are usually used to train students' information literacies. These assignments create challenges for teachers' traditional instruction practices as teachers have to guide students to work independently in information environment that a teacher cannot fully control. The point of departure of my study is the tension between traditional teacher-centered pedagogical practices and learner-centered assignments (Sormunen & Alamettälä 2014).

My aim is to develop new practices for IL instruction in collaboration with the teachers by applying design-based research approach. I use Kuhlthau's *Guided Inquiry* (Kuhlthau, Maniotes & Caspari 2012) as a pedagogical framework. The underlying idea of the Guided Inquiry framework is that information literacies are best learned by training appropriate information practices in a genuine collaborative process of inquiry. The goal is that, in addition to information literacies, students learn curriculum content, how to learn, and how to collaborate for learning.

My preliminary research questions are:

What kind of practices arise for IL instruction when teachers apply the model of Guided Inquiry in their teaching?

How do the teachers feel about the new method? What are the advantages and disadvantages?

How does the long-term teaching intervention change students' self-efficacy in IL, basic skills and knowledge in IL, inquiry related attitudes, and self-regulation in inquiry assignments compared to non-participating students?

What are students' working practices and how do they change during the intervention?

What are students' learning experiences?

I will conduct the study as a longitudinal intervention study in a Finnish comprehensive school (grades seven to nine). I compare two parallel groups: a test group and a control group. The teachers, who will be familiarized with the Guided Inquiry model, design/redesign three modules for IL instruction and integrate them into three courses taking place over a two-year period. I study selected classes not exposed to the intervention as a control group. The aim of the study is to introduce an evidence based practice for the integration of information literacy modules into a set of courses in lower secondary education.

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Keywords: information literacy instruction, guided inquiry, lower secondary education

### INTERNATIONAL STUDENTS AND ACADEMIC INTEGRITY: GLOBAL PERSPECTIVES ON A COMPLEX ISSUE

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International students have become an integral part of higher education in the United States, providing both global perspectives and much-needed tuition to universities. It is clear that the presence of these students on American campuses helps create international connections and prepares all students to work in a multicultural environment. However, living and learning in a new culture and functioning in a second (or third, or fourth) language can be difficult, and these students may face unique challenges such as homesickness, discrimination, and unfamiliar academic expectations. In particular, students may struggle with issues of academic integrity, a concept that is perceived and defined in different ways in different cultures. My dissertation research will use critical incident technique (CIT) (Flanagan, 1954) to explore how these students perceive the concept of academic integrity, how they view these issues in an American context, and how this affects the process of completing graduate-level academic work. Librarians are natural proponents for academic integrity on higher education campuses, teaching students to find, evaluate, and use information in an ethical manner. Ultimately, I hope that this research will help colleges and universities, and especially academic libraries, provide better support for international students as they adapt to U. S. higher education.

This paper will outline the research questions, theoretical framework, methods, and initial findings of my dissertation work. Data is collected via face-to-face semi-structured interviews. The study is designed using CIT, a technique in which findings are often used to inform practical outcomes (Hughes, 2007) – in this case the ways that academic librarians provide research and academic integrity support to international students. Participants, all of whom are international graduate students studying in the U. S. for the first time, will be asked to describe the process of completing a major academic assignment that required research and writing. The completion of this assignment is the "critical incident," and the description of the process is used as a tool to initiate conversation about academic integrity issues. During analysis, particular attention will be paid to data that corresponds to the three attributes of intercultural communication competence: awareness, sensitivity, and skills (Chen & Starosta, 2000). This research is influenced by Crotty's (1998) assumptions about constructivism: humans construct meaning as they engage with the world, and this meaning is based on social and cultural perspectives.

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Keywords: academic integrity, plagiarism, international students, intercultural competence, higher education

### **EXPLORING THE INFORMATION LITERACY EXPERIENCES OF ESOL (ENGLISH FOR SPEAKERS OF OTHER LANGUAGES) LEARNERS. A DISCUSSION OF METHODS**

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In this paper, I will share the research questions and methods of my doctoral study, a longitudinal case study of three community ESOL classes in England. In particular, I will identify and reflect on the methodological issues that have emerged during the pilot study phase that I completed in early 2015.

ESOL learners are typically individuals who have migrated for work, marriage, or to claim asylum who are learning English as part of adult basic skills provision. They can be seen as disadvantaged by several measures and are very different from the higher education student who is the focus of much information literacy (IL) research. There has been interesting research on IL and immigrants (Aarnitaival, 2010) particularly refugees (Lloyd, Kennan, Thompson, & Qayyum, 2013), on IL and language learning (Hicks, 2013; Johnston, Partridge, Hughes, & Mitchell, 2014) as well as research on digital literacy from ESOL researchers (Barton & Potts, 2013; Dudeney, Hockly, & Pegrum, 2013). There is, however, a need for further work such as Patterson's (2011) study from the United States to help us understand the particular nature of IL in an ESOL context, the relationship between language learning and IL and the impact of this on the lives of learners.

The research will take place in the ESOL classes provided by a local authority that run in schools and other community venues. My primary aim is to understand the particular case but I hope that the findings may also provide a wider understanding of how IL can be fostered within ESOL learning. The research is constructivist and I will take a grounded approach to data analysis. My pilot study consisted of one observation of an ESOL class and two focus groups that were held in existing conversation classes. The participants reflected the heterogeneous nature of ESOL learners; they had various first languages as well varying levels of English and literacy. In the focus groups, I used photo elicitation to prompt discussion about the participants' information experiences while I took an ethnographic approach to the observation. The aim of the pilot was to explore how far rich data can be collected from participants with limited English, sensitizing me to the field and enabling me to gather initial ideas from participants to shape the subsequent research. I will discuss the challenges encountered and look forward to the full data collection where I will use a range of methods including observation, focus groups, interviews, journals, drawing, and photovoice. It is interesting primarily because it explores how participatory methods can be used in IL research. I am also keen to discuss my work with colleagues to learn from their guidance and expertise.

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Keywords: information literacy, ESOL, adult education, methods participatory, language learning

### **Doctoral Research on Teachers as Technology Users: Summary of a Work in Progress**

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The aim of the study is to analyze how various aspects from different social domains (Layder, 2003) are related to ways in which teachers integrate technology in their practices. Pedagogic use of information and communication technology (ICT) has been extensively studied for several decades. However, quantitative approaches dominate this field. This study provides a much deeper look in the complex patterns of interrelated social and individual factors that affect pedagogic use of technology. The research questions of the study:

- How are various factors stemming from individual and societal domains related to teachers' usage of ICT?
- What is the role of teachers in promoting and mediating the technology use of their students?

To answer these questions, data are employed that have been collected in the course of an action research project carried out in Latvia, and a number of semi-structured interviews with Estonian teachers. This is an article-based doctoral study trying to reveal why some teachers adopt technology relatively easily while others stay reluctant. In the first article (Karaseva et al., 2013) the links between the use of ICT and subject cultures (Goodson & Mangan, 1995) and constructivist- instructivist teaching styles (Zhao, 2004) were examined. This framework did not explain fully differences in ICT use by the same subject teachers, therefore teachers' achievement motivation (Butler, 2007) was brought into the play in the next article (Karaseva & Pruulmann-Vengerfeldt, submitted for publication). This allowed capturing how different are the achievement goals that teachers strive to attain, and how they affect their use of ICT. In the third article (Karaseva, Siibak, & Pruulmann – Vengerfeldt, 2015), teachers' pedagogic beliefs and technology self-efficacy were related to the roles that teachers play as social mediators for students' use of digital technology. The fourth publication deals with teachers' perceived technology self-efficacy and their Internet search skills when performing various information search tasks online.

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Keywords: teachers, digital technology, self-efficacy, pedagogic beliefs, subject cultures, ICT practices

### LEARNING WITH SOCIAL MEDIA: AN INFORMATION LITERACY DRIVEN AND TECHNOLOGICALLY MEDIATED EXPERIENCE

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This paper is framed within a doctoral research that integrated social media (SM) in a learning experience for students and explored the roles that information literacy (IL), digital literacy, and new literacies play in such a learning experience. This research assumed a mutual shaping perspective regarding its three main elements (learning, literacies and SM), thus opposing the perspective of technological determinism. This stance allows gaining a better understanding about the role of technology in students' learning experiences and for exploring how these experiences may affect the way technology is implemented into learning contexts. The main learning theories supporting this research are: constructivist, blended and problem based learning; the three dimensions of learning (cognitive, social, and emotional) and the theory of affinity spaces. The methodological approach used was participatory action research (PAR), which is cyclical in nature. Thus, a first empirical study was conducted and then its methodology was enhanced, resulting in the development of the research and methodological framework "Doing Online Relearning through Information Skills" (DORIS), which was used for a second empirical study. The latter framework consists of five IL-based stages, which were: introduction, access, use, evaluation, and wrap-up. Moreover, DORIS' stages contained a series of learning interventions based upon the implementation of learning strategies such as: lectures, a blog that was used as a content hub and an interaction space for online forums, complementary readings, and three assignments that participants had to complete. These assignments were: a) reflecting upon the individual use of SM, b) developing of a SM site, and c) evaluating an established SM site. During the stages of the study, data collection methods used were: students' reports that they wrote to summarize their experiences from doing the assignments, diagnostic and final questionnaires, which were made respectively at the beginning and end of the study; and semi-structured interviews. Data analysis relied on the method of content analysis as well as various stages of open coding, constant comparative analysis, as well as axial and selective coding. This paper provides a summary of the discussion derived from the data analysis, focusing on: a) the issues of social media; b) challenges of using social media for learning; c) usefulness of learning strategies; d) what students learned according to the dimensions of learning; and e) the mutual shaping of social media, learning experiences, and literacies. This research may contribute different elements to IL research, practice and programs, such as: the grounding of IL activities on PAR, its theories, epistemologies and the mutual shaping perspective, as well as its methods and results. DORIS can be used to organize learning interventions with a structure driven by IL skills. As such, it can be used for teaching, learning and researching technologically mediated learning environments. It could also be adapted for facilitating IL programs or teaching different subjects from an information skills framework.

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Keywords: social media, higher education, teaching, learning, participatory action research, information literacy

### LIBRARIAN - USER RELATIONSHIP IN MEDICAL Colleges of Delhi, India

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### OBJECTIVES

In the western world, librarians are encouraged to conduct information literacy courses to enable individuals to find, evaluate and use information effectively. For India, health information literacy (HIL) teaching, research and learning is in the infancy stage. This preliminary study aimed to assess the existing relationship between librarians and library users on information literacy courses and competencies in health care settings.

### Methodology

Data from librarians and library users from five medical colleges of Delhi in year 2014-15 was collected to identify information literacy (IL) competencies of library users and courses offered by librarians. Two sets of questionnaires were designed for library users and librarians with each questionnaire divided into three sections. The first section of the user survey collected demographic information about the participants. The second section sought information about users' knowledge of information literacy and the third was assessment related to information searching skills. In the librarian questionnaire, the first section was on demographic information; second section was on the availability of ICT's in libraries, and electronic resources. The third section addressed the status of information literacy programs offered by librarians in the medical institutions. IL skills of the users are matched with services and facilities rendered by the librarians.

### OUTCOMES

Survey findings indicate that library users have moderate information literacy skills; limited awareness about scholarly sources, activities and services offered by libraries. They use basic search methods and are not much aware of MeSH or Boolean operators. Most medical students expressed study burden, while clinicians stated that a heavy workload keeps them from finding time to ask librarians about the needed information, types of information sources, and searching techniques. The librarians in medical institutions indicated their problems in offering such courses. They are not fully aware of the facets and components of information literacy. It seems there are fewer opportunities available to students and library users in learning and research. Poor association among both the communities is apparent.

#### Conclusion

In order to keep pace with the developed world, the stakeholders of medical education in India should involve, encourage and support librarians in the creation of information literacy courses and teaching for the benefit of medical students' and health care professionals' education and learning.

Keywords: assessment, health information literacy, library users, relationship, medical librarians

## TRANSFORMING LIBRARY INSTRUCTION THROUGH CREATIVITY

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My conceptual paper will provide some ideas for challenging the traditions of the library including the habits of our institutions and the habitats they occupy. As librarians, we can encourage play and manage failure -- failure framed by reflection and iteration and less by penalty and closure. Librarians can create a classroom culture as one of a place for mistakes and child-like inquiry. Once we are less afraid to make mistakes, we open up the environment for play and experimentation.

One particular challenge of university librarians is knowing how to engage students in their learning. Librarians need to incorporate critical and reflective information literacy in their teaching to establish a sense of adventure in confronting new realities about higher education and the ways students learn. In redefining the library classroom that "sells" the value of the library to administrators and users in the digital age, the library classroom must provide the framework for the library to be a place for transformation. The library can lead the way as a catalyst for cross-disciplinary germination as we seek creative solutions in the classroom to stimulate thinking and fuel a renaissance at this crossroads in education for the twenty-first century. Inquiry-based feedback coupled with deep observation encourages a more open-ended and in-depth approach to the traditions that should be questioned.

There are opportunities for librarians to develop the capacity in their students for divergent thinking, which is defined as the process of generating many ideas to explore possible solutions to a problem. While divergent thinking is not necessarily synonymous with creativity, it is a stepping-stone for transformative thought. The scholarship of Elmborg [1], Jacobs [2], and Swanson [3] on critical and reflective literacy is the groundwork for divergent thinking in the field. It is at this intersection where critical and reflective literacy collide that we can learn from the process and product that the arts provide to our teaching and learning. The library can learn from theories about play and the imagination, rooted in the works of James and Brookfield [4], as a gateway to a new information literacy that accounts for all modalities.

Technology provides the natural opportunity to develop the creative capacity of students. New creative work lends itself to exploring a whole range of digital literacies that are required in our culture. While technologies might not in themselves be the answer, they might provide the impetus for refiguring old patterns and search for new ones. The practice of information literacy can learn from the arts about creatively engaging the classroom. This positions students to be researchers and learners for a new era. Risk taking, inherent in the kind of questioning and outside-of-the-box thinking promoted in creativity, is important in driving innovation.

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Keywords: information literacy, critical literacy, reflective pedagogy, creativity, arts

### **ELECTRONIC ENGINEERING STUDENT INFORMATION LITERACY NEEDS: A PILOT STUDY AT THE UNIVERSITY OF SURREY**

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### **OBJECTIVES**

The purpose of this paper is to present the findings of a research study into the Information literacy (IL) needs and perceptions of Electronic engineering first year students in the University of Surrey using the broader definition of information needs as "problems" requiring a solution to satisfy a "purpose" (Dormer, Gorman & Calvert, 2015, p. 8), and perceptions as an alternative to the term "conceptions" used by Webber, Boon and Johnston (2005). This is the pilot phase of a doctoral study aiming to improve practice in IL teaching in these Higher education engineering programmes making it relevant to the needs of students and incorporating the academics' and librarians' requirements in order to empower students to achieve.

### Methodology

Key IL theoretical frameworks were reviewed such as sociocultural practice theory and phenomenography (Limberg, Sundin & Talia, 2012) to finally focus on an inductive constructivism approach (Bryman, 2012) with a qualitative research design and a case study approach which incorporates an action research element. The pilot study research took place after the IL teaching intervention in order to get IL informed student input and was delivered by the practitioner researcher. The data was analysed thematically and included: a semi-structured interview with the academic who led the module, two two-person student focus groups and semi-structured interviews, the practitioner's reflective diary to help support the action research element of the study, lecture notes and handbooks.

### FINDINGS

Emerging themes included: communication or rather lack of communication, higher education teaching, employability, IL level requirements, positive interaction between students and the academic with the librarian, dynamic intervention, perceptions on internet searching and more. Part of the analysis for the case study involved the researcher taking an action research approach to the IL intervention. This action research element contributed both to the case study analysis and to the researcher's practice in teaching IL. The limitations were the student numbers and lack of student motivation. Potential bias may have been introduced because the researcher was the teacher. However there was no other means to collect this data and it was a pragmatic decision. This approach which offers a reflection element and the ability to visit from the inside is supported in the literature (Jarvis, 1999; Cousin, 2009; Blaxter, Hughes & Tight, 2010). Some practical implications from the pilot were the introduction of a discussion forum to increase student input, semi-structured interviews with students and some changes in the interview questions used. There is little research in electronic engineering IL student needs and this sheds light on the students' experience of IL within modules. On a practical level there is value in the findings as they reassert the need for constant communication to improve our IL interventions.

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Keywords: information literacy, higher education, UK, students, needs, engineering

### How Do Higher Education Emirati Students Experience Information Use? A Mixed Methods Approach to Research

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Upon transitioning to higher education, Emirati students bring their cultural values and sentiments into the teaching and learning environment (Baghat, 1999; Dahl, 2010; Raven, 2010). Using the Explanatory Sequential Method of Mixed Methods approach, this research will attempt to explore how the information use of Emirati students enrolled in higher education is experienced in light of what is revealed when national culture is explored.

This research will seek to explore the information use experience of the Emirati higher education student using a Mixed Methods approach to research which is still relatively new in the Information Science disciplines. This quantitative phase used Hofstede's Cultural Dimensions framework to explore the cultural values and sentiments of the Emirati student enrolled in Masters level programs higher education via a questionnaire. It is hoped that the results of this first phase of study will provide understanding into the types of questions that can be asked about information use (Bruce, C. 2008). Following this, Emirati students enrolled in higher education will be interviewed in a qualitative phase about their information use experience in the second phase of data collection.

Mixed Methods research affords the opportunity to provide better answers than a single study would, as all dimensions of data are considered. Combining the findings of cultural dimension characteristics of the students and the relational perspective of information use, this research hopes to gain a deep level of understanding into how culture and information use interact to influence the information use experience for Emirati students in Higher Education.

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Keywords: culture, emiritization, information literacy, information use, mixed methods

# **BEST PRACTICES**

### **Research Support – Constructing Services for Doctoral Students and Researchers in the University of Eastern Finland Library**

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The University of Eastern Finland (UEF) is a multidisciplinary university with four faculties and more than 100 major subjects. UEF operates on three campuses with 150 kilometers distance from each other. Therefore, the University has determinately developed methods in distance learning and e-learning.

Requirements of academic research and publishing reflect also the tasks and functions of academic libraries. New tasks for the University Library come, for example, from publishing, research data management, and effectiveness evaluation. These new tasks are changing the image of the Library and its position in the academic community.

In 2010, the University Library decided to offer courses in information retrieval for all postgraduate students both in Finnish and in English. The course is included in the transferable studies of the doctoral education curricula in the University. The diversity and differences of disciplines are both a challenge and opportunity for the course. Therefore, in addition to general lectures for all participants, it involves discipline-specific sessions and exercises.

The multidisciplinary character of UEF creates needs for the Library teachers to cover a variety of the disciplines. The Library's IL teachers are organized as a teaching team. They work as smaller teams consisting of 2-3 teachers. The students are able to take classes on the campuses of their own choice. Students with interdisciplinary interests may take part in different discipline-specified modules.

In 2014, the course was developed even further to include fields like bibliometrics, the practices of academic publishing, and research data management. Additionally, the internal structure of the course was changed on the basis of the feedback received from the participants. Further feedback indicated increased satisfaction with these changes.

For researchers, UEF Library offers advice on Open Access publishing and other services like scheduled lectures and courses. The Library also administers and maintains the web-based research collection of the University. The new funding system of Finnish universities takes account of the publishing activities of the researchers more than earlier. Therefore, the Library decided to organize a new course, Basics of Academic Publishing and Research Assessment, to meet the researchers' needs in questions related to publishing. We are constantly developing even more services to support research.

The aim of our presentation is to describe which tools UEF Library uses to enhance the scientific, digital and information literacy of the doctoral students and researchers. We will describe the construction and subjects of the courses as well as other services, provided by the Library for research.

**Keywords**: University of Eastern Finland Library, research support, courses in information literacy, post-graduate students, publishing services, scientific literacy

### THE POTENTIAL OF SOCIAL NETWORKING TOOLS FOR PROMOTING INFORMATION LITERACY SKILLS AMONGST UNDERGRADUATE STUDENTS IN OMAN

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The emergence of the interactive web 2.0 and social networking tools has brought about fundamental changes in how information is delivered and used. University and college students now have better opportunities than ever before to communicate and exchange web-based information with their instructors, librarians, and peers for the purpose of meeting their information needs and improving their learning outcomes. Information literacy skills and competencies play an effective role in improving life-long learning capabilities of information users in general. They also represent a distinctive role for students in particular to meet the demands of the new era of mobile information.

This paper aims at investigating the extent to which undergraduate students exploit the potential of social networking tools, including cross-platform mobile applications, to improve and sharpen their information literacy skills and competencies. The study also explores their attitudes and practices in using these tools to interact with their groups of friends and librarians or information specialists in order to leverage their information literacy skills.

The study uses a quantitative method consisting of self-administered questionnaires to collect relevant data from undergraduate students drawn from nine colleges at Sultan Qaboos University. A stratified random sampling technique is used to collect data from subject units. The questionnaire collects demographic information about the respondents as well as exploring their motivations for using social networking tools. It also contains questions targeting the respondents' attitudes and practices when they encounter or purposefully use social networking tools for improving their information literacy skills or answering inquiries related to certain sorts of information behavior. In addition, the questionnaire seeks to answer questions regarding practical benefits that respondents receive through their use of social networking tools for the purpose of improving and enhancing their information literacy skills.

The findings of this study offer practical guidance for academic libraries in enhancing the design of their information literacy skills programs for undergraduate students through harnessing the potential benefits of social networking tools. The results of this study can also help librarians and information specialists to recognize the potential of social networking tools to extend their instructional roles beyond the physical setting of their libraries and utilize these tools to enhance students' information literacy.

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

### THE LONG AND WINDING ROAD. INSIGHT FROM STUDENT MISCONCEPTIONS

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Although online resources can complement and support face-to-face teaching, they run the risk of creating a distance between the student and the teacher. However, this might be counteracted through careful design of structure and content. In particular, interactive tasks can provide the student with much needed feedback while at the same time allowing the teacher access to both static and event data information from student replies to evaluate and improve the course content.

This winter, the University Library at UiT launched a MOOC on information literacy, iKomp (www.edx.bibsys.no, with estimated launch of the English version in May this year). Built on the open source platform Open EdX, iKomp consists of four modules: learning strategies, source evaluation, information searching, and academic integrity. As with most MOOCs, the content is a mix of text, videos, learning activities, and tests. The final exam consists of a 40- question multiple-choice test.

The lack of direct teacher-student interaction makes the assessment of learning outcomes from MOOCs and other web-based courses a challenge. While it is important that the selected assessment method tests the students' understanding of the course content, we consider it equally important that the exam instigates learning. Each question in the multiple-choice test closing iKomp has four alternative answers, and each distractor, or wrong answer, is formulated as a plausible answer, thus encouraging thoughtful deliberation in the student.

An advantage of using event recording technology in teaching is the possibility of gaining insight into student learning through usage data. In this paper, we present the results from a deep log analysis of the exam results from a period of six months. The study has a twofold objective: By examining the students' performance, we aim to evaluate the exam content. Specifically, in analysing response patterns, we can assess whether some of our alternative answers are confusing or if the questions are easily misunderstood. By examining the type and rate of errors, we aim to determine the areas where students need more input. Filling these gaps, we answer the students' needs and thereby improve the overall value of the course.

The analysis of the exam answer distribution log reveals that several questions are too easy, as the majority of students succeed on the first attempt. Other questions are more evenly distributed, with more than one answer alternative being selected quite frequently. This paper presents patterns, or the lack thereof, between answer distributions and course content. Specifically, do certain content areas stand out, in terms of error rates? We discuss whether a revision of the exam or the course content is called for, and whether some areas may be harder to teach online than others.

We consider this type of analysis to have at least three possible benefits: (i) improving our information literacy courses, (ii) refining our understanding of student learning, and (iii) increasing student-teacher interaction online.

Keywords: information literacy, evaluation, online training, student-teacher interaction, learning analytics

### LIBRARY INSTRUCTION'S INFLUENCE ON STUDENTS' SEARCH BEHAVIOR AND ACADEMIC DEVELOPMENT

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We have performed two studies, of which the aim was to explore how the students at Oestfold University College in Norway describe and assess the influence of the library instruction courses of information literacy (IL) on their studies. In order to do so, we performed two qualitative studies by interviewing and observing the students about their skills in information retrieval, critical use of sources and reference technique.

We started by interviewing and observing 19 first year students from nursing and teacher education studies. Nine students had attended the IL instruction, and ten had not. The semi-structured interviews lasted about 20 minutes. During the interviews, the students' thoughts on various IL topics were examined. Likewise, we observed the same students while they were searching for information in the library, limited to an additional half hour. We compared the results of the students who had attended library instruction to those who had not. The IL instruction did not have the expected impact on our students' search behavior, as there were only slight differences between the two groups of students. This study was presented at ECIL 2013.

We performed a follow-up study two years later to see if the students' search behavior had changed. This time we interviewed and observed 12 third year students, who all had participated in our first study. In the period after the first study, the nursing students had attended regular IL instruction while the teacher education students had not been offered the same opportunity. The same topics were examined in the second study. In addition, we asked for their opinion about the IL instruction. The answers varied, but none of them referred to the IL instruction as important for their academic achievement. However, by comparing the students who had attended regular library instruction each year throughout their study to those who had attended none or only one IL class, we found that the two groups differed more than in the first study. The results show that students who had attended IL instruction regularly showed a better understanding of their search behavior, recognized more databases, and talked less of Google than academic sources of information. Furthermore, the results of the study reflect certain differences between nursing and teaching studies regarding academic requirements. Students from nursing studies are obliged to read and use academic articles in their assignments at Oestfold University College. The teacher education students do not have the same requirements. Only the nursing students had any knowledge about the academic databases.

From this research we learned that there are differences between groups of students based on the number of IL lessons they have attended and academic requirements. This shows that the IL instruction is important for the students' academic development.

Through these studies we have obtained new ideas on how to develop our teaching further, such as making Google the starting point in our IL lessons. In addition, the results from our study taught us that our IL instruction should be shorter, focus on only a few topics, and be delivered "just-in-time".

Keywords: search behavior, academic development, students, information literacy, academic libraries, higher education

# GIVING BACK, A GREEN LIBRARY PROJECT

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Green libraries is a vision and a project to amplify the effects of the green movement and as such contribute to its spread and sustainability within our society. Saving energy, using water efficiently, recycling and reuse practices are behaviours that should be reinforced. In this paper we will describe the measures taken by the Seixal Public Library (SPB) in order to reduce its environmental impact since building construction through the use of toxic free products and recycling practices but also through public promotion of several projects with environmental overtones. These include promoting civic, media, social literacies and the exchange of several goods within the local community mostly targeted at children, families and teenagers. Of these initiatives, we will underline the green practice of exchange and reuse of school manuals, *Dar de Volta* (*Giving Back*), a project of social and cultural significance that belongs to the green libraries movement (Antonelli, 2008). In Seixal County alone this project has recycled over fifty tons of paper from outdated manuals, and allowed the reuse of 117.410 school manuals. For families, that represents savings of over two million Euros (2.348.210€). Giving Back is a pioneer social entrepreneurship project of SPB (Silva, 2012). Begun in 2006, is a singularly important issue when in Portugal there is an excessive multiplicity of school manuals and a questionable practice: Schools recommend different manuals annually, a practice that has a serious impact on the environment and on family economics.

Giving Back uses concepts of social ecology and eco justice (Martusewicz, 2011). Its base is nourished by the community itself, and it shapes new behaviours, encourages a reusing lifestyle and strengthens a real life social network. SPB operates it as catalyst agent of a continuous synergetic project that aims for environmental balance and social ecology, while at the same time promotes the local library within the community, raises new readers, and ensures access to essential educational resources for reading and learning school subjects, essential for better and more effective use of information literacy. This project was adopted throughout the region and currently is featured in all the libraries of the District of Setúbal (5 064 km<sup>2</sup>, 848.842 inhabitants). It has also inspired other libraries and Portuguese institutions. In a planet threatened by pollution and disfigured by tensions within its social ecology, the realities of poverty and abundance become a parallel phenomenon. Data demonstrate that poverty and inequality are associated with social, economic and cultural realities scarred by social and ecological unbalances. This contradicts the sustainability of a worldwide green society, and reinforces the importance of information literacy and other literacies. These are fundamental for the development of informed and critical thought in the XXI century, and a citizenship focused on integrating development that harmonizes natural and social environments (The Lyon Declaration, 2014). The response to this challenge in a global form implies a broad intervention based on a holistic comprehension of reality. Green libraries should commit themselves to a green environment, green literacy, and green social ecology. *Giving Back* contributes to these aims.

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Keywords: green libraries, public library, social entrepreneurship, recycling, social ecology, eco justice, literacies

### Curation for Knowledge Management and Information Literacy in Immunology Using Scoop.it

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In Science and Medicine, knowledge increases at very fast pace, raising major problems for learning and teaching and real challenges for the students. Paradoxically, while scientific literature is more and more OPEN source, multiplication of access tools leave much of it in the grey zone of the internet. Indeed, to spot and identify relevant information, end-users (students, scientists, researchers, teachers and practicing MDs) rely mainly on widespread search tools with unequal results. Laypeople are even more dependant on those commonly used search engines. Fortunately, curation tools have been recently developed and are free to use on the web.

### **OBJECTIVES**

Implement Scoop.it as a knowledge management and information literacy tool in a graduate and post graduate environment

### Methodology

Curation tools help users sharing internet information but their format and performances are not similar. Scoop.it allows the detection of specific relevant information through the proprietary search crawler, through curator's visits of the web and applet usage and/or through interest community discoveries. After selecting posts, comments can be easily added. Sharing information of interest for the curator, his fellows and audience is convenient and attractive with picture association. Storing information in the cloud and finding it again with a search engine, days or months after curation is a major advantage. Gathering specialists of a field with common interests and/or learning or research objectives around a topic is possible in the education plan.

### OUTCOMES

Building of specific databases covering basic immunology, and related fields such as: mucosal immunity, flow cytometry and cytomics, immunology and biotherapies, allergy and clinical immunology, and autoimmunity, has been accomplished and maintained regularly for the past few years almost on a day to day basis. They cover as well published literature, either classical or OPEN, or grey literature from blogs, websites, social networks and press releases particularly useful for instance coming from drug companies or universities, with a very rapid access to information.

Curation with Scoop.it allows researchers and teachers to stay abreast of rapidly evolving fields and to show their thought leadership. Knowledge management experiences from other "scoopiters" involved in immunotherapies, immunomonitoring, neurosciences, diabetes, next generation sequencing, and plant biology will be presented.

Curation with Scoop.it allows sharing information in the immunology field for students and trainees worldwide. Curation practice will allow students experience in discovering and mastering scientific information before and/or during their master or doctorate projects and help them become autonomous learners for their life long learning.

To illustrate information literacy potential in earlier stages of training, successful topics trying to make science accessible to children and laypeople will be described. The use of the tool as an appropriation of internet for education will also be reported.

In summary, we emphasize the potentials of the curation tool Scoop.it, as a well-designed tool for knowledge management of "serious" information in Science and Medicine, which has numerous applications for information literacy, teaching, life-long learning, research, creativity and science communication to society.

Keywords: curation, life sciences, immunology, teaching, knowledge management

### TRENDSPOTTING: RECENT TRENDS AND Missed Opportunities in Library and Information Literacy Instruction

### Nancy Fawley

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Staying abreast of changes in technology and pedagogy, along with calls questioning the need and relevancy of libraries and librarians, puts immense pressure on librarians. But in their quest to stay relevant, do librarians move too quickly to the next "big thing" abandoning sound teaching methods and practices to stay current and have presentations and papers accepted? Are there practices that are quickly forgotten or overlooked as librarians focus on the newer and more popular trends, that would also be the topics most likely to be accepted at a conference or in a journal?

While literature on this topic is relatively scarce, a recent study focused on trends in library instruction and information literacy by examining peer-reviewed journal articles over a period of time to determine their type of content (empirical research, theoretical research or case study) and key themes (Sproles, Detmering and Johnson 2013). For this study, I examined abstracts from the past five years of the LOEX Conference (Shirato 1999) presentations to identify trends in library and information instruction and determine the longevity of the trends.

LOEX is a professional conference held annually in the United States that focuses on library instruction. I selected this particular conference due to its prominence in the field and its narrow focus on library and information literacy instruction. The nature of conference presentations lend themselves to descriptive case studies of programs or services. The relative immediacy of the event, as opposed to a lengthy publication process, also allows practitioners to highlight current trends and techniques that may or may not warrant a full-length article. Librarians also look to conference presentations as a way to stay up-to-date with the latest trends in the field.

I coded presentations that were related to instruction or teaching practices based on topic and type of presentation. I also noted relationship to the conference theme, through word choice or content. I then tracked topics across five years to determine which endured and which did not. I discussed the preliminary results of the study and the trends that endured and those that did not. Participants gained an insight into current and prior trends in the field and discovered ones that may be relevant to pursue further for their own practice.

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Keywords: information literacy, instruction, trends

### INFORMATION LITERACY STANDARDS AND Recommendations in Germany

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During the past 10 years, the German information literacy working groups and networks developed IL standards for the different user groups that are the focus of university libraries: Bachelor students, Master and doctoral students, high school students, and high school teachers. This contribution discusses their realization at German university libraries and presents best practice examples.

The information literacy standards for university students of the German Library Association are based on the ACRL standards and contain indicators for finding, evaluating and using information. They are now going to be integrated in the new German reference framework information literacy that defines detailed knowledge levels from kindergarten to university.

Master and doctoral students have special needs and demands. The guidelines for teaching information literacy to doctoral students contain learning objectives including electronic publishing, bibliometrics, research data management and social networks; they recommend didactical methods and suggest intensive networking within the university.

It is one of the main goals of the networks' information literacy to support the libraries in order to help them transform into teaching libraries. The guidelines for teaching information literacy at university libraries recommend adequate organizational structures and describe possible ways of implementing the standards into library courses.

In addition to university students, high school students are an important user group of many university libraries. About 20% of the library courses are aimed at high school students. The information literacy standards for high school students of the Bavarian library network contain the set of competencies for searching, locating, evaluating and using scientific literature that high school students can acquire with the help of university libraries. Complementary organizational and didactical standards provide orientation for cooperation between schools and libraries.

Not only the students, also the teachers have to be(come) information literate. Therefore many university libraries in Germany offer special trainings for teachers in cooperation with the centers for teacher education. The checklist for teacher training in university libraries covers all relevant aspects of the organization, content and didactical methods.

Finally the commission on information literacy of the German Library Association has worked out a profile of qualification and requirements for teaching librarians that describes the necessary technical, vocational and social skills which have arisen from a round table of libraries and library schools. This profile will be presented, as well, and its practical consequences discussed.

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Keywords: information literacy standards, doctoral students, high school students, university library, Germany

# CERTIFICATE COURSE "TEACHING LIBRARIAN" IN GERMANY

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Integrating a library science further education and training facility in a university with modern infrastructure and experts in theory and practice guarantees the use of modern teaching methods and know-how transfer for practical use. These facilities as impulse generators create forums for the expansion of expertise and exchange of knowledge via networking within a profession and a variety of cooperative relationships. One of three further education and training establishments for information specialists linked to library and information science departments at German universities is the ZBIW at TH Koeln<sup>4</sup>. The teachers have didactical methodological knowledge of adult education and apply it in these courses. They also use practical examples and problems involving professionally relevant subjects as well as being active in teaching and research and/or having experience in the field. Quality is ensured by constant evaluation that tests teaching content and conditions. Quality assurance and development in training courses is supplemented by regular audits and accreditation.

### THE NEW "TEACHING LIBRARIAN" CERTIFICATE COURSE

To professionally support library target groups, especially students, postgraduate students and researchers, in acquiring information expertise librarians must become teachers and advisors under conditions that greatly differ from other teaching environments. The "Teaching Librarian" certificate course is intended to qualify library staff to meet the challenges posed by their profession and to plan and carry out courses communicating and teaching information skills. (ZBIW, 2015) Opinions and discussions with the HRK<sup>5</sup> formed the basis for the course and its content.

#### **Content Structure**

The aims of the course are taught in seven modules that are closely interlinked: Module 1: Principles of information expertise / Module 2: Basic didactic skills / Module 3: Planning teaching methods / Module 4: Use of media and the design of teaching documents / Module 5: Performance evaluation / Module 6: Blended Learning / Module 7: Practical module with final presentation

#### **COURSE RESULTS**

On completing the course students will be able to include information expertise standards in their planning of courses, to orientate courses to specific target groups, to plan their courses making all due allowance for internal and external teaching and learning factors in an proactive manner oriented to the participants, to meet curricular conditions and harmonise course modules in courses consisting of more than one module, to utilise both standard and state-of-the-art media in their presentations, to evaluate their courses and reflect the results thereof in future courses, and to draft blended learning courses that are specifically tailored to target groups and plan the didactical methods used therein.

The presentation shows in detail the content and advantage of this certificate course started in February 2015. In particular the presentation will focus on the dovetailing of theoretical knowledge and everyday professional life.

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Keywords: certificate course, teaching librarian, didactic skills, teaching methods, Germany

<sup>4</sup> ZBIW:Library and Information Science Further Education and Training Centre of the TH Koeln – Technology, Arts, Sciences (University of Applied Sciences), Institute of Information Science)

<sup>5</sup> HRK – Hochschulrektorenkonferenz: German Rectors' Conference

### INTEGRATING FRAMEWORKS, STANDARDS, AND DATA-BASED Decision Making for Information Literacy Instruction

### Samantha Godbey

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In February 2015, the Association of College and Research Libraries (ACRL) officially filed the *Framework for Information Literacy for Higher Education*. This document presents a new approach to information literacy based on threshold concepts. This framework is very explicitly *not* a set of standards, instead providing a set of "interconnected core concepts." Originating in the field of economics (Meyer & Land, 2003), threshold concepts refer to troublesome, transformative concepts within a discipline. Rather than retire the existing *Information Literacy Competency Standards for Higher Education* (2000), the framework was presented in addition to the standards, referring to these multiple documents as a "constellation of documents on information literacy." In this best practices presentation, one librarian will share her experience with navigating this constellation of documents in her practice as a subject liaison librarian to the College of Education at a large, urban, public research institution in the western United States. As a librarian to future educators, additional standards and documents must also be considered, including the ACRL *Information Literacy Standards for Teacher Education* and teacher preparation standards.

Additionally, in 2013-2014, the presenter conducted a mixed methods study assessing the information literacy skills of 152 students within the teacher education program at this university using *iSkills*, an assessment of ICT literacy skills developed by the Educational Testing Service (ETS). Aligned with the *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. A subset of students participated in focus groups, which elaborated on student experiences with information literacy within their teacher education curriculum.

The presenter will share the impact of changing information literacy standards, in conjunction with the results of her research study, on her instruction. She will provide an analysis of relevant information literacy documents and share strategic changes made to her instruction within the College of Education. Attendees will gain an understanding of the new information literacy framework and build expertise in strategically integrating threshold concepts and standards into information literacy instruction.

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Keywords: information literacy, threshold concepts, standards, instruction, iSkills, teacher education

### Towards Sustainable Online Tutoring in Information Literacy: Sharing Ideas

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Online learning and tutoring, and online teaching material form a part of the teaching selection offered in all Finnish universities. The use of online materials and the resources targeted at online pedagogy as a promoter of study and learning, not only involves teachers, but also belongs to the everyday work of many university libraries. In fact, it can be considered that libraries have already been the enablers and facilitators of blended learning for a long time via their online material and databases. Moreover, the more materials become available online, the more tutoring is needed in how to use them – specifically online tutoring. For this purpose, universities of applied sciences that work as a network benefit and gain new ideas from each other. The presentation by our Pedagogy Working Group will provide some examples of our good practices.

An increasing number of students sit for their entrance exams and then next visit the campus to collect their degree certificate. Teaching is delivered to the students' homes where they study when it suits them. Studying is flexible, agile and individualized. Similar forms of information literacy tutoring and teaching are available to students regardless of where they study, be it Oulu or Sydney. Thus a tutor-learner community is created on the web and in different forms of social media.

Sustainable development could be considered to include the making and sharing of material in cooperation. Once prepared, such material can be edited and used by all, simultaneously sharing the workload, knowledge and good practices. This is in accordance with the values and trends of sustainable development: as it becomes easier to reedit material and to increase its life-span, working time is released for other purposes. In addition, networking and global partnerships produce added value and new channels and forms of learning, both at a national and international level.

We 26 Finnish UAS libraries form an online network where we share know-how by organizing joint training courses, developing, for example, communication and pedagogy in working groups for our "common good". We have also produced publications in cooperation, such as Information Literacy in Higher Education - Recommendation for Finnish universities, (http://www.amkit. fi/amkit-konsortio/tyoryhmien-julkaisuja/?lang=en) as well as several articles, and more are on the way.

One example of how we share ideas and best practices was a workshop day based on Finna, a new library interface. Our Pedagogy Working Group co-operated with other UAS library working groups in arranging the workshop. Beforehand, we collected experiences, ideas and practices in using, informing and educating users of Finna. The workshop was planned, executed, and attended both in person and online by the members of the Finnish UAS Libraries Consortium. We aim to continue our collaboration and to share ideas.

Keywords: university libraries, sharing good practices, online tutoring, cooperation, sustainable development
### LIBRARIANS AND ENGLISH TEACHERS JOIN Forces in Information Literacy Training for Better Learning Results

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How to get teachers involved in information literacy training together with the librarians? This appears to be a problem that higher education libraries around the world are trying to solve. In this presentation, we will share a success story from a Finnish university of applied sciences.

For years, our challenge at the Helsinki Metropolia University of Applied Sciences Library was that the information skills training we provide for our technology students was completely separate from their professional studies. Furthermore, the training mainly consisted of one session, held right at the start of the studies. New students of engineering did not necessarily feel they would benefit from training that was not directly linked to their field.

The current situation in our library is significantly better: In the fields of technology and engineering, our librarians now work together with the English teachers, which has increased the amount of information skills training. The cooperation began in autumn 2011 on one campus and has since then spread to other campus units.

In most technology degree programmes, language teaching has been integrated into the professional studies. Cooperation between English teachers and librarians began as shared discussions on where to find high-quality teaching materials for English lessons. As a result, a joint workshop was planned and held at the library in cooperation with an English teacher. It is important that librarians themselves clearly state what should be taught to the students from the library's point of view, how the students should prepare for library training sessions, and how the information literacy skills of students could be improved in cooperation with the degree programmes (Meulemans and Carr, 2013, 83).

The English language teacher and the librarian now organise a training session for third year students. They plan the lesson structure, contents and objectives together. This brings many benefits. The English teacher and the class have prepared themselves for the library lesson beforehand, so that each student has a particular information retrieval assignment. The information literacy skills improve as the students have an actual assignment in their professional field that can also be connected to an industry-based project. The librarian has the main responsibility for the session and its schedule. The teacher is also present and participates in helping the students with the assignment.

In our presentation, we will share our experiences on the cooperation and on how these workshops have promoted the information literacy skills of the students. In 2015, our target is to measure the effectiveness of the workshops on the information literacy of the students and further develop the workshops based on their needs and skills. The effectiveness will be charted with a two-part questionnaire which will measure the students' information literacy skills before and after the workshop.

Metropolia UAS, Finland's largest university of applied sciences, educates students in the fields of culture, business, health care and social services, and technology. Metropolia has 16,500 students. The Metropolia library has eight library units and two partner libraries.

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Keywords: IL teaching, collaboration, teacher and librarian collaboration

### LIBRARY ALTERNATE REALITY GAMES: BEST PRACTICES FOR Building Gaming Programs at Academic Libraries

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In pursuit of student success at institutes of higher learning, it behooves educators to seek out opportunities to engage with students in a meaningful manner. Students who remain un-engaged by their experiences at institutes of higher education may ultimately withdraw and fail. The key to student success is to foster opportunities for students to connect with their campus in both abstract and concrete ways, so that students form ties to facilities, services, and with one another.

The past few years have seen an increase in the use of games as a means of connecting with students. In her book *Game on! Gaming at the library* Beth Gallaway (2009) writes about the importance of libraries embracing gamer culture, with "97 percent of [teens] playing on a regular basis (p. 32)." According to the 2015 Horizon Report, "An increasing number of universities, such as Stanford University and MIT are leveraging the soft skills that games have proven to instill in learners, integrating games into their curriculum designs to simulate real world activities. (Johnson, Adams Becker, Estrada, and Freeman, p. 22)."

Beginning in 2012, a team of designers, comprised at their core of librarians and instructional designers, began creating enriching engagement experiences in the form of games, specifically Alternate Reality Games (ARGs), also referred to as "transmedia". What started as a brief week-long experiment has blossomed into a series of semester-length programs, incorporating various learning styles and methods of connecting to hundreds of students, all engaged voluntarily and at their own pace and level. Information literacy and other literacy competencies are embedded into the experiences subtly; players have to research and create content on various platforms in order to be successful in the game. By partnering with various offices, but keeping the library as its hub, students connect with information literacy principles, the Common Read, and other campus programs in a deeper and more meaningful way.

Campus partners included the university's First-Year Experience program, career and employment services, information technology, the English department, student union, art museum, student newspaper, and hundreds of points around the campus, both inside and outside of various facilities.

Because transmedia involves multiple formats of communication and ARGs incorporate multiple types of games into a larger narrative, they appeal to a wide variety of players. Play is voluntary, therefore, participating students are able to select which aspects they desire to interact with, acquiring the agency to play as they like, at the pace they can sustain, without interfering with their coursework or other aspects of university life. This "opt-in" method of design allows students to become involved in a community of play at their own level.

Presenters will highlight examples and best practices for creating large-scale gaming programs on campus and discuss the challenges inherent in game design at this level.

### OUTCOMES

Attendees at this session should expect to come away with evidence and knowledge regarding the success of large scale games in university library programming and strategies for implementing them at their own institutions.

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Keywords: transmedia, gaming, libraries

### **EFFICACY OF AN INFORMATION LITERACY PROGRAM: Reflections from Khalifa University**

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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, Technology & Research in the United Arab Emirates, from the University's inception in 2008 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 explored. In addition, challenges facing the Librarians past and present will be discussed. The University is the first co-educational Government University in the University is dedicated to providing the Emirate of Abu Dhabi, the UAE, the region and the world with highly qualified engineers, technologists and scientists, capable of making major contributions to the UAE as leaders and innovators of industry and society.

The language of instruction at Khalifa University is English, and since most students are not native English speakers their preparatory entry level focuses on English language learning, such as Reading, Writing and Listening, in addition to general studies which includes 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.

### Methodology

Surveys will be used as the method of data collection. Results from data gathered through quantitative methods will be used to measure variables and verify existing theories.

The experiment will focus on all sections of the preparatory year program including faculty and students, in addition to senior students from various engineering departments. 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: university students, library skills, foundation year, preparatory year

### Scientific Publishing from A to Z: An E-learning Course for Ph.D. Students at BUT

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The Central Library at Brno University of Technology (BUT) is developing an information literacy solution at the university. Besides an e-learning course for the first year students and live workshops, we also prepared an e-learning course which assists Ph.D. students and researchers with writing and publishing their scientific papers. The content from three separate courses were combined into a new replacement course. One of the previous courses specialized in referencing and different referencing styles, another focused on electronic information resources and the last one was devoted to scientific writing. The new course aims to provide guidance throughout the wholeprocess of preparing a scientific paper – starting with seeking for information resources and their legal use. Then the course continues with the scientific writing and choosing the proper journal for publishing. It ends with the basic information about the system of evaluation of scientific articles and the tools that might be used to promote the paper. The course is run in the learning management system Moodle and enjoyed a successful pilot year. Twenty three PhD. students were enrolled in the course and only two did not finish it successfully. Fourteen students are enrolled in the course this semester.

The major task for the students is to propose a scientific paper. They have to choose a journal in which they would publish the paper and have to follow the journal's guidance for the format. Students suggest the approximate divisions of the text, title, abstract, keywords and indicate the author. Next task is to list sources of information they would use for writing the article. Documents must come from different databases and other scientific sources and should be diverse. Students also have to type a paragraph where they quote one of the sources. References in the text and in the list of references must match the journal style. At the end students have to suggest two tools where they would further promote their published article.

The upgrade to the newer version of Moodle (2.8.3+) has allowed experimentation with some features that make students more involved. We provide the core student materials in the wiki module and students can change them, add comments, and amend as suitable. The major change is that students control and evaluate their work amongst themselves. Each of the students evaluates work of three of his/her classmates. Tutors enter the process only when an extreme evaluation appears. The course participants get graded for their submission and for their assessments. By assessing the work of their peers, students can learn from each other. They get a more comprehensive view of the work and can see the strengths and weaknesses of their own and their classmates' submissions (Singh, 2014, p. 201). In our presentation we describe the course and share our experience with the recent changes.

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Keywords: e-learning, scientific writing, Moodle, workshop, group evaluation

### INTEGRATING NEW PROFESSIONAL KNOWLEDGE about Information Literacy into Practice: A Professional Development Case Study

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### **OBJECTIVES**

This session showcases best practice methods for delivering professional development to library practitioners, specifically focusing on professional development that enables librarians to integrate new content knowledge about information literacy into their work practice. The advantages, disadvantages and sustainability of different forms of professional development delivery will also be discussed. There is currently a lack of evidence about the long-term impacts and effectiveness of professional development on library practice. This presentation will investigate the impact of professional development and how or whether practitioners implement the knowledge they obtained through professional development sessions in the long-term. The professional development committee of the Information Literacy Network (ILN) of the Gulf presented a series of workshops in 2015 on the Association of College & Research Libraries' new *Framework for Information Literacy for Higher Education*. These workshops integrated best practice for professional development into their design, such as active learning and a focus on content knowledge (Garet, et al., 2001). Evaluations conducted immediately after each workshop indicated that 100 percent of respondents expected that the content of the workshop would be useful to their current and future information literacy instruction activities. Participants also reported a positive response to the active learning elements of the workshop. Follow-up interviews with a selection of participants approximately 6-8 weeks after the workshops will be conducted to assess whether their expectations were correct, and how knowledge gained from the professional development activity was processed and integrated into participants' daily work practice, along with enablers or barriers to doing so from the participant perspective.

### Methodology

A case study methodology is employed to examine the impact and effectiveness of a single series of professional development workshops on library practitioners. This case is examined through the use of surveys, observation, and semi-structured qualitative interviews. These data-gathering instruments are used to assess both the immediate practitioner perceptions of the professional development activity, as well as the longer-term impacts of the activity on their professional practice.

### OUTCOMES

Attendees to this session will gain knowledge about effective and ineffective professional development techniques, which can be used to design and deliver professional development activities.

This workshop will also provide evidence about the longer-term impacts of professional development on librarians' information literacy work practice, an area which is understudied, yet essential to the future of professional practice in libraries.

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Keywords: professional development, information literacy, sustainability, best practice

### INFORMATION SKILLS CLINIC: FACILITATING INFORMATION LITERACY AND LIFELONG LEARNING

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### INTRODUCTION

One of the key elements in today's education is the concept of lifelong learning (LLL), a concept which also affects the ways information literacy (IL) is being taught by academic libraries. For the purposes of teaching and learning IL, Brendle-Moczuk (2006, p. 500) has delineated the term "lifelong learning" into three intertwining components of cognition, behavior and information seeking skills. The latter is then expanded to also include IL and information technology abilities, hence making information literacy the third component of LLL (Brendle-Moczuk, 2006, p. 500). Most academic libraries offer IL teaching, but the number of teaching hours assigned for IL is usually limited, which means information specialists have a relatively short time to teach students the necessary skills. This is hardly enough to provide societies of the information age with the confident, independent and self-regulated learners, who are well equipped for LLL in general and IL in particular (Kurbanoglu, 2003, p. 636), "success is not simply based on the possession of necessary skills for performance, it also requires the confidence to use these skills effectively". So in addition to teaching students IL skills, academic library staff must also promote their users' self-efficacy, making them feel confident and competent in the use of their newly acquired skills (Kurbanoglu, 2003, p. 636).

### **OBJECTIVES**

The presentation discusses the role of reference services in the light of lifelong learning and offers a different approach. A traditional way of conducting these services is for the information specialist to provide the information seeker with answers to their requests, with the library staff doing the work. Although convenient for the patron, it does nothing to improve their IL skills. This is why a more pedagogical approach should be employed. In order to do this, the Information and Library Services of Lahti University of Applied Sciences has turned the reference service into an Information Skills Clinic, which offers personal, tailored sessions where information specialists help users in using databases and finding sources relevant to their subject and level of study, give guidance in assessing information quality and help in citing digital information (Kiviluoto, 2014). As a joint academic library our user base consists of students and staff of upper secondary, vocational and higher education, which presents us with an opportunity to support the gradual development of IL skills throughout the educational continuum.

### Methodology and Outcomes

The impact of the Information Skills Clinic on LLL and self-efficacy is assessed in the light of a survey conducted amongst the service users. The survey was sent via email to 124 students participating in the Clinic since August 2014. The preliminary results suggest participants are satisfied with the service and feel it has improved their IL skills. The majority of respondents also think they will continue using these skills after graduation.

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Keywords: information literacy, lifelong learning, self-efficacy, reference services, tailored services, joint academic libraries

### IL ON THE GO: INFORMATION LITERACY SUPPORT WITH Mobile Interactive Multimedia Content at the Vienna University of Economics and Business Library

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Online materials which help library users improve their information literacy competencies have been developed at the university library of the University of Economics and Business (WU) in Vienna, Austria. The objective of the strategy presented herein is to provide the users of the library with a tool which supports them in solving problems related to information literacy at the time of need, independently, and without barriers in the access to the content.

The online materials help close the time gap between the availability of direct, personal support by the library staff via reference desk service, library courses, email or telephone, and the moment when the user encounters a problem during her/his research process. Therefore, the materials cover topics such as finding the right type of source, finding the right search terms, formulating a search query, library services, and accessing available sources. The content design and methods used vary depending on the type of target knowledge. In order to improve the service to fit the challenges students face during the study process, the team considers problems that users bring up frequently as new topics at the personal support services mentioned above.

All content has a mobile-friendly design and is accessible from desktop computers as well as from mobile devices. For this reason, all elements – text, multimedia and graphics – adjust to the browser window size. The interactive multimedia content is delivered in Flash format for use via desktop computers, but detects access from a mobile device through a JavaScript query that automatically redirects to an identical HTML5 version, which users can access with most of the current mobile devices.

The materials are organized on the Learning Management System of WU, Learn@wu. Throughout the library website, links direct to the content, which users can access without registration. This makes it difficult to find out more about the users, their experience and satisfaction with the service. For technical reasons, only the number of page impressions can be monitored for the text sites. As the multimedia content is hosted on a different server, the team started to collect more details about usage, for example through what kinds of devices and systems users access the multimedia content. This data, in combination with a user survey, will provide a better picture of the strengths and weaknesses of the material, so it can be improved according to the users' needs.

In the next step, a full translation of the material into English will be carried out. The target groups at WU are the approximately 1000 exchange students per semester, international Master or doctoral students and participants in international summer schools, who so far cannot use the materials due to the language barrier. Furthermore, it is planned to raise the share of interactive content and tests in order to give the users the opportunity to self-check their knowledge.

Keywords: mobile learning, e-learning, information literacy, university library

### FACULTY SUPPORT: SHAPING AN INFORMATION LITERACY LEARNING ACTIVITY HANDBOOK

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In this paper we describe the aims and processes of creating an information literacy (IL) learning activity handbook for a Spanishspeaking faculty community, with the assumption that a set of IL standards-based exercises will help faculty foster information skills among higher education students. We conceptualized the manual under the constructivist paradigm that focuses on the learner, as an active person who is responsible of his/her own learning, and places the professor as a facilitator of the learner's learning goals (Alarcon Leiva, J., Hill, B. and Frites, C. 2014). Similarly, we also created the handbook as a tool to develop competencies, in other words, the IL complex skills of thinking and acting in real life information settings, and because active instruction "…yields heightened student learning outcomes" (Detlor et al. 2014).

Universities need to suggest and provide tools, such as classroom models, of IL learning and teaching. We wrote this handbook at CETYS University, a Mexican institution located in Baja California, that embraced the task of crafting a set of information-related handbooks that would offer flexible instruction exercises for faculty to adopt, adapt, or create on their own after mastering the IL activity principles. After writing the first two handbooks, covering paper format (APA) and how to write essays, CETYS and the Universidad Veracruzana (UV, Veracruz, México) jointly crafted the workbook. Similar manuals have been published in the English language IL literature (Burkhardt, J. M., and MacDonald, M. C. 2010), but there has been none in the Spanish-speaking world where information sources and IL skills present specific challenges.

We based the learning activities on Mexican IL standards and a six-credit online activities course for undergraduate IL learning. The number of course learning activities, a spinoff of the handbook, more than doubled during the project, resulting in a total of 75 activities. Each IL learning activity was screened in terms of neutral discipline relevance, covering core IL skills development for searching, evaluation, use, and communication of information, and using international and Spanish language information repertories. The exercises follow a template with two sections: the first for general information that includes, among other items, title and type of competence to develop, according to Mexican IL standards; followed by the second that includes the learning objective of the activity, instructions, and an example or a template for completing the IL activity. The workbook is nearly ready for publication and as a website source. The handbook will benefit CETYS, the UV faculty, and certainly the Ibero-American higher education community. Librarians who teach IL are also among potential users of this workbook that can be used as a model to create discipline and specific course-related IL learning activities.

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Keywords: information literacy learning activities, learning exercises, Spanish language information learning activities

### "WALK THIS WAY": APPLYING RADICAL INFORMATION LITERACY TO INSTRUCTION

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While Native Americans comprise 8.9 percent of the population in South Dakota (U.S. Census Bureau, 2015), they represent just 2 percent of the University of South Dakota's (USD) student body (Institutional Research, 2013). USD faces pressure from its accrediting body, the Higher Learning Commission, to attract, retain, and graduate minority students. Academic diversity initiatives are desirable because they can ideally provide space for dialogic communication (Whitworth, 2014), enabling all participants to learn from and about each other as they engage with the discourse of higher education.

Every summer a cohort of students from Indian nations gathers at the Crazy Horse Memorial in Custer, South Dakota, to participate in a "bridge" program, a collaboration between the Indian University of North America (IUNA) and USD. Program goals include "prepar[ing] students for the rigor of college" and "protect[ing] and preserv[ing] the culture, tradition, and living heritage of the North American Indians" (USD, 2015). Participants enroll in freshman-level courses including English Composition, Math, and Public Speaking and also work at the Crazy Horse Memorial. They thus occupy liminal spaces with multiple demands, including the expectation to perform *Indian-ness* for the memorial's visitors while also learning how to function within the American highereducation context. The South Dakota Board of Regents mandates information-literacy (IL) instruction in general-education courses including the courses at IUNA. The presenters, members of the University Libraries' faculty, have provided required IL instruction in the English-Composition and Public-Speaking courses since 2011. We initially approached this IL instruction as if we were teaching white students, given the instrumental goal of preparing the Native American students for Anglo-American academic life. While our instruction seemed appropriate from the instrumental perspective, something was lacking. We were reaching the students intellectually but not relationally. That is, we remained strangers to one another; we arrived and left as visitors.

This presentation focuses on the benefits that can result from changing our roles. Utilizing a simple metaphor, that of the *guest*, in spaces occupied by culturally diverse groups allows for both shifting of power and shaping of relationships. Being a guest requires "cognitive work" (Whitworth, 2014, p. 184) or anthropological analysis (Simmons, 2005) to understand and reposition ourselves within the IUNA cultural context. Applying the lens of radical or critical IL, we recognized that we had claimed space that is not ours by behaving as visitors rather than as guests. Entering this contested space as guests changes the power dynamic. Students (our hosts) control the discourse, ensuring that their voices are heard. As guests we accomplish both the instrumental mission of teaching skills necessary for educational success and relational goals including learning about and honoring our students' cultural understandings of information. Moving from visitor to guest is transforming our worldview, our instruction, and our interactions, both at IUNA and at USD. This presentation offers a new way to "walk." Through identifying the affordances and constraints of the guest metaphor, participants are positioned to accomplish the instrumental and relational goals of effective IL instruction for diverse populations.

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**Keywords**: Native American students, diversity, radical information literacy, critical information literacy, information literacy instruction

### ACTIVE LEARNING OF INFORMATION LITERACY WITH GAMIFICATION AND MENTIMET

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As a teaching librarian you learn that students will only seek information and learn if they are motivated to do so (Limberg, 2008). The difficult part is to discover what motivates students. A goal with gamification is to gain a person's attention and to involve the student in the processes you have created. Engagement of an individual is a primary focus of gamification (Kapp, 2012, s 11).

At Stockholm University Library we offer courses in information retrieval and library instruction to over 70 000 students and employees from 70 different departments. We have made the choice to focus on students who are about to write their thesis and to meet them in smaller (15-20 students) groups.

For undergraduate students, we offer lectures with larger groups (150-200 students). To increase motivation and student interactions, we introduce aconcept in two parts. First, we provide a lecture that is completely student activity driven. The students have to answer questions in Mentimeter by using their smartphones and then we show their answers on a big screen and discuss them. Mentimeter is a cloud-based tool that lets you engage and interact with the students in real-time(www.mentimeter.com). The emerging technology of classroom communication systems offers a promising tool for helping instructors create more interactive student-centred classroom, especially when teaching large groups (Dufresne. et al. 1996).

Second, we meet the students in smaller groups, for 45 minutes only in a reference court. The students have to prepare three good references on a given topic before the seminar. At the seminar they have to defend their choices of references based on a discussion of source criticism and scientific values.

The results of this concept have been successful both in terms of student attendance, student evaluation, and teacher feedback. We are planning on continuing with this concept especially with large students groups or where the students is not driven by an internal motivation.

During this best practice seminar we would like all participants to use Mentimeter and to see how we use active learning as a way of increasing information literacy. We will share our Mentimeter questions and show how we let the students play reference court.

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Keywords: active learning, gamification, teaching

### WHERE THE RESEARCH PATH LEADS YOU: Creating an Interactive IL Game

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How do you create an interactive method for teaching students how to conduct research? One option, build a game. Digital games are a dominate form of recreation for all ages that can have a positive influence on information seeking behaviors. For libraries, the gamification of the research process has helped us reach students in new and exciting ways that are both interactive and entertaining.

Starting from our research tutorials, we built an online "Choose your own Research Adventure" game to help students experience both the positive and negative outcomes of their research choices. As part of the game, students are provided with multiple options for completing each step of their research. Should the student start with Google or a library database, where will it lead? Search broadly or narrowly, what will they find? These questions and more can all help students develop their research skills through our interactive online game, with multiple steps of the research process broken down to show where each path, right or wrong, can lead them.

Since its inception, our online game has gone through varying stages of development, but the ultimate goal has been to create a source that helps students remember how to successfully complete research and use it in future projects. From storyboards to websites to screencasts, the game has progressed to have more options for interactivity to help support multimodal learning incorporating auditory, visual, and tactile elements.

Participants are invited to learn about the production of our online research adventure game and how it can be used in information literacy sessions. They will have the opportunity to see the finished game and will be provided with tips on how to build their own research adventure.

Keywords: information literacy, tutorials, online gaming, libraries

### An Evidence-based Partnership: Embedding a Research Skills Program in Higher Education

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Implementing an effective information literacy (IL) program in any college or university of higher education institution is no easy task, especially where little has existed previously. Usually attempts are made by librarians rather than faculty to initiate IL programs, and these can be in the form of one-shot instruction addressing a particular class or assignment, some degree of embedding instruction within courses or programs, or full credit-bearing IL courses taught by librarians (Badke, 2005; Zai, 2015).

The acceptance of regular and effective IL instruction in tertiary institutions is often impacted by the lack of perception by faculty and management that students face any real problems with their level of research skills at all. Despite many claims to the contrary about this 'Google generation' however, world-wide research now documents the overconfidence of students in estimating their knowledge and skill levels when researching (Combes, 2009; Hofer, Townsend, & Brunetti, 2012; ). Despite evidence of poorer than expected research skills in students however, Badke (2005) notes that from a generalized classroom faculty perspective, IL registers as "only a small blip on the radar of most professors and their academic administrators" (p. 69).

In this paper we will discuss the current implementation of a system-wide embedded IL program in Higher Colleges of Technology (HCT) in the UAE, in a tertiary education facility spanning 17 campuses and educating around 20,000 students. The impetus for such an extensive implementation of a new IL program has come from a range of sources, including recent government and institutional policy changes, as well as informal but widespread conversations between librarians and faculty about the problems that faculty are experiencing with poor student research skills at all levels.

This paper argues however, that the time and resources invested to develop a system-wide IL program should not be justified by discussions with faculty, nor by the enthusiasm and advocacy of librarians alone. By themselves, neither of these factors are likely to maintain the impetus and longevity of an IL program. Rather, the developmental partnership between faculty and librarians should be informed by empirical evidence which documents and benchmarks the IL skill levels of students, and the goals of the IL program, considered essential if we as a library community are to work successfully with faculty and management on such new program developments, which are more likely to transcend changing personalities and competition for resources in the long term.

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Keywords: information literacy, evidence-based, research, higher education

# THE DIGITAL PRESENCE OF SCHOLARS: WHERE AND WHO THEY ARE AND HOW THEY INTERACT

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Scholars are more likely to socialize with remote fellows who impact their field of research through the arrival of new technologies that offer various platforms for spreading and exchanging ideas. Developing strategies for disseminating research findings and establishing networks is important especially for young researchers at the beginning of their careers. We investigated the digital presence of scholars at different academic online services. Based on our findings we will advise our local research community and integrate teaching content to the existing information literacy programs at our institution.

In our study we compared research profiles of employees at the University of Bergen on five different services. These five platforms were ResearchGate, Academia.edu, Google Scholar, Researcher ID, and ORCID. We gathered demographic information about the employees through CRIStin, the Current Research Information System in Norway (www.cristin.no). CRIStin is a national database that contains quality-assured data on scientific publications including supplementary author details such as age, gender, position, and affiliation. While all services have varying scope and degrees of control, they also share common features that are worthy of investigation and comparison.

We collected the data from the five services by searching for institution and scraping available indicators on underlying pages. We conducted the author recognition by comparing names given in the services with names appearing in CRIStin. After extensive data cleansing and deduplication we were then able to compare the different services.

Our first goal was to determine the degree of overlapping content between the services. The overlap tells us whether scholars were willing to maintain their profiles at several services. Our investigation also examined preference of platform in regard to faculty affiliation, position, and age.

Further, we analyzed available bibliometric, social, and activity indicators. Bibliometric indicators included the number of publications and citations attributed to each scholar while social and activity indicators included such as activities as the number of followers, views, and downloads. The indicators varied from service to service and a correlation analysis provided evidence of whether indicators were related to each other or not.

We found that about 37 percent of researchers at the University of Bergen had at least one profile. Since they were reluctant to maintain several profiles, overlap was therefore relatively small. Age was a poor predictor of web site use and women were underrepresented on the investigated platforms. The digital presence was highest among the Faculty of Psychology and the Faculty of Social Sciences (more than 40 percent) across all platforms. Available indicators showed a high correlation within bibliometric indicators but poor correlation with social and activity indicators across platforms.

Finally, we presented how we intend to integrate our findings with the existing online tutorial PhD on Track (www.phdontrack. net).

Keywords: academic online profiles, PhD training

### Public Library as a Place of Innovative User Education and Lifelong Learning

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This abstract introduces the most innovative user education services we offer at Tallinn Central Library and what our best practices are. Today's user training in the library means more than teaching how to use library's databases and catalogs. It is important to teach people how to use media and communication technologies in different everyday situations, in order to understand and evaluate the information they receive.

According to Tallinn Central Library's annual activity report, in 2014 the library carried out individualized user trainings and group lessons for 16, 603 users. User education lessons for ages 27 and above made up almost 68 percent of all the user trainings in our different departments and branch libraries which shows the importance of libraries for learning and acquiring new practical skills.

As several aspects of daily life become increasingly digital, technology's role is undeniable across all demographics. Older and younger populations are becoming increasingly involved in this fast moving technology revolution including the use of personal computers, smartphones and social media. Additional to the regular free user education programs, such as basic computer training, libraries need to teach users how to use all types of new technical solutions. Tallinn Central Library decided to start making this type of user education more of a priority.

### TABLET PCs AND SMARTPHONES USER TRAINING

The library developed a learning portfolio with practical exercises and library obtained tablet PCs for this user education program. It has been a highly popular training since the beginning of 2014. Our librarians began dividing users into different groups, because it was hard to manage a class of people who had various levels of skills and knowledge about technical equipment and social media.

#### FACEBOOK USER TRAINING

One of the most visited programs in our libraries has been the user training of the social network Facebook. Reference reading room users came to our librarians with many questions about Facebook, and due to this we developed a program for teaching and learning the network. We use the same system as the tablets and smartphones training where people are divided into beginners and advanced users so it is easier to reach every participant.

### **E-services and ID-card User Training**

In November 2013 the library began offering courses for e-services and ID-card training. Most of the personal e-services require the use of an ID-card. Usually these trainings are individualized due to the usage of personal data (confidential information), for instance teaching how to pay taxes electronically, make virtual banking transactions, for issuing digital signatures with ID-card and logging on to different virtual environments.

### DIGITAL DRAWING TABLETS AND FLATBED SCANNERS USER TRAINING

Tallinn Central Library has recently introduced two new types of technology: digital drawing tablets and flatbed scanners which offer a quick and efficient way to work in our reference reading room. Since they are quite new technologies, we offer user education courses for these as well. Incorporating these new technologies helps to bring a younger demographic to libraries where they can learn the benefits of advancing their technological skills.

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Keywords: user education, public libraries, new media, new technologies, best practice

### **Useful Feedback? Student Evaluation of Teaching in Information Literacy Instruction**

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Student Evaluation of Teaching is a widely used although contested development tool in higher education. In the context of University Library Information Literacy instruction some questions arise. How to get students to give feedback? How to work with feedback in a way that encourages librarians to continue to engage in teaching? How to make real changes as a response to the feedback? Sharing experiences from Helsinki University Library Arts and Humanities Information Literacy Team, I will present some thoughts on successful feedback practice from several viewpoints.

In the Helsinki University approximately 600 students enroll in the Faculty of Arts and Humanities annually. Information Literacy Teaching is credit-bearing and compulsory for the Bachelor of Arts Degree for about half of the disciplines and our team meets around 250 students every year. A Blended learning approach that consists of one-shot contact learning in the library and further assignments online is used for the disciplines taking part in the credit-bearing model. There is one information specialist responsible for the program and in addition five teaching librarians are working together to give instruction through the academic year.

My main focus of interest is the use of students' evaluative feedback of teaching to develop teaching librarians' teacher identity. Faced with the challenge of large number of students and the need to build a teaching team out of colleagues with varying or little teaching experience I will discuss how working with feedback in a consistent way can strengthen teaching librarians' reliance on themselves as teachers and even motivate reluctant colleagues to teach. All librarians are not enthusiastic teachers and those who doubt their abilities are even less inclined to want to know what students think. Reflection of student feedback both individually and in the group helps one become aware of feelings associated with the teaching experience in all its complexity. Support and knowledge of more experienced colleagues helps to put the challenges of the new teacher into perspective and helps the new teacher slowly master the classroom situation.

I will also consider using feedback for improving the practice in a more traditional way that points out the developmental points in practical arrangements and library infrastructure. Consequently I will make a point of using successful feedback for promoting IL instruction both within the library and for the administrators, faculty and students in the University.

Student Evaluation of Teaching has been questioned as a means of measuring teaching success or student learning in higher education. For the purposes of developing the practice of library information literacy instruction, promoting the usefulness of the instruction and developing the professional identity of teaching librarians these considerations need not to become a problem.

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Keywords: information literacy, student evaluation of teaching, feedback, reflection, teacher identity development

### LIBRARIAN OR NOT – TEACHING Information Literacy Together

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The purpose of this paper is to describe co-teaching as a flexible model, which can be applied outside one's own library with various partners. The paper explains how Laurea University of Applied Sciences (UAS) Library in Finland has combined information literacy (IL) guidance with the expertise of others in various learning situations. Co-teaching has been carried out in Laurea Library for ten years and it has gradually diversified. All the described partnerships continue still. Studies reveal that co-teaching is a slow and demanding process including much collaboration, which can at best lead to changing the teaching culture (Medaille & Shannon 2012, Mounce 2010, Pritchard 2010).

In 2005, as part of a project, an information specialist and nursing lecturers co-taught concurrently students and nurses in a computer class at a hospital. During the interaction, the information specialist learnt about health-care information practices, the lecturers gained information about reality at the hospital, nurses improved their know-how on information sources, and students learnt information retrieval in a versatile, interactive learning environment.

A few years later an information specialist and nursing lecturers began guiding hands-on workshops together for nursing students writing their thesis. The lecturers commented on the subject, and information specialist on the search process. All participators shared new viewpoints. As a result, students found high quality information for their thesis, lecturers and students updated information retrieval skills, and information specialist heard about new trends in health care. Positive feedback has encouraged applying this model of co-teaching in workshops also to other subjects.

Since 2011 an information specialist and ICT-lecturer (Information Communication Technologies) have held an online course on a virtual learning environment for first year students. They instructed students on the technical and information environment via dialogue and interactive exercises. The two hosts supported each other in the flow of lessons. Compared to asynchronous lessons, the students found the synchronous online real time lessons motivating and appreciated immediate feedback.

The most recent form of co-teaching involved representatives from different kinds of organizations: an information specialist from UAS, a lecturer from a vocational institute, and a librarian from city library. They compiled and executed jointly a program on teaching IL to vocational health-care students. Students completed exercises in a public and UAS library, and thus learnt how to benefit from different libraries. In addition, the vocational students familiarized with Laurea UAS as a place for further studies.

In comparison with individual teaching, co-teaching with representatives from different fields or organizations enhances networking, is efficient, and is an empowering learning experience with shared expertise. From the students' point of view, IL-skills are understood as competences related to concrete study or work situations. According to course evaluations in general, they feel that their information landscape expands and co-teaching makes lessons more interesting. The next pilot in Laurea UAS is to guide information retrieval with working life representatives at working places. In conclusion, co-teaching is easy to modify according to topic, group, duration and know-how. However, in order to succeed and change the teaching culture, co-teaching requires commitment during a long term process.

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Keywords: information literacy, co-teaching, faculty-library partnership, networking

### INTEGRATION OF INFORMATION LITERACY (IL) Skills into the Core Business Curriculum

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This case study assessed the process of implementing the integration of information literacy (IL) skills into five core courses of the undergraduate business curriculum. It took placed over the period of five years (2008-2013) at the Business School in the main campus of the University of Puerto Rico. This University is the oldest, most complete, public higher education system of Puerto Rico. It is composed of eleven campuses with a total faculty of 5,054, and 61,967 students.

In 2008, the Business School took its first steps toward the integration of IL skills into the curriculum as part of the process for the accreditation review of the Association to Advance Collegiate Schools of Business (AACSB). The School faculty & the librarians used the American Library Association's definition of information literacy as "a set of skills common to all disciplines which will equip students to be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information", (ALA, 1989). The collaborative team adopted and adapted the Association of Colleges and Research Libraries (ACRL) information literacy standard model. The ACRL model recommends a tier integration of IL skills into the curriculum core courses and assessment. The team defined integration of IL skills as a tier mandatory process linked to core courses' assignments and assessment. The team also identified the IL skills to be developed in the core courses. Librarians and faculty collaborated with the development of learning activities and assessment. However, assessment was the responsibility of the professor who shared the results with librarians.

This case study aim to find out which were the salient factors that contribute to the success of IL integration into five core courses. Data collected for each course followed Detlors, et al (2011) holistic theoretical model. The study sought to answer two principal questions: 1) what were the factors that advance or impinge the progress toward the integration of information literacy skills into the core business curriculum? 2) How the experience and knowledge gleaned from the analysis help to improve Detlor, et al's (2011) model, and ultimately contribute to the theory and practice on information literacy?

Detlors's model proved useful to organize and analyze the data collected for each course. We found that, despite that the integration of IL skills into each one of the five core courses utilized the ACRL model and the same strategies of implementation, yet, the results were varied. We expected to identify a pattern for future application. But the result in each one of the courses was different and in one in particular, surpassing our expectations. We found that success is contingent to the level of commitment of collaboration among faculty, librarians, and the administration. The unique finding was that political changes and the economic crisis impacted the process negatively causing a high turnover of the university's top administration and faculty collaborators. In light of these finding we proposed some improvement to Detlor, et al's model, making it applicable to a wider educational audience.

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**Keywords**: curriculum integration, information literacy instruction, core business curriculum, undergraduate business students, Business School University of Puerto Rico

### ACRL's Framework in the Arab Gulf: A Practitioner View on National Frameworks in Transnational Higher Education

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### **OBJECTIVES AND OUTCOMES**

This presentation discusses insights gathered from library practitioners in the Arab Gulf over the course of two professional development workshops to analyze how the Association of College & Research Libraries' new *Framework for Information Literacy for Higher Education,* as well as the threshold concepts it puts forward, may or may not find relevance in transnational higher education (TNHE) settings. TNHE is a designation which includes many forms of education where programs are delivered across national borders, such as international branch campuses, twinning programs, and joint degrees. In recent decades the numbers of these programs worldwide has grown exponentially (Naidoo, 2009; HESA, 2013), and statistics suggest that most of these programs are of American, British, or Australian origin (Lawton & Katsomitros, 2012). However, the implications of this trend have not been widely considered or investigated in the field of academic library practice. The ACRL *Framework* states that it is "...not intended to prescribe what local institutions should do in using the *Framework*; each library and its partners on campus will need to deploy these frames to best fit their own situation..." (2015); and, needless to say, the *Framework* does not explicitly address TNHE anywhere in the document. Therefore, a view on how practitioners perceive of and apply this new framework in their own transnational contexts has the potential to be informative to both international and domestic practitioners seeking to derive value from this framework, as well as to the developers of such frameworks in educational source countries as far as considering the potential opportunities or barriers to transnational dissemination and adoption.

### Methodology

This exploratory study was conducted through observation of two professional development workshops conducted in spring 2015 involving approximately 40 practicing library professionals working in the Arab Gulf region, and representing a diverse array of institutional types and forms of TNHE provision. These workshops focused on introducing the new ACRL *Framework* and the threshold concepts on which it is based, as well as considering implementation issues for curriculum and assessment. In the months following the workshop, approximately six participants were contacted to discuss the immediate impact of the framework and the workshop on their practice, if any. Observations drawn from the workshops and data gathered from these interviews make up the data set for this best practice presentation.

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Keywords: information literacy, transnational higher education, framework, threshold concepts, Arab Gulf

### PROJECT ONLINE INSTRUCTION TOOLS @ RADBOUD UNIVERSITY NIJMEGEN

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In 2013, we began our project on Online Instruction Tools at the Radboud University Nijmegen. Our aim was to find suitable software for developing interactive online instruction and developing (open) online instruction modules.

After testing several kinds of tools we managed to find the right authoring tool and used it to make a set of effective instructions for our students with it. The software we have selected, Xerte Online Toolkits, is a high quality open source product, developed by the University of Nottingham.

The reason why we chose this authoring tool is that it is easy to use for both students and authors. It is also free and offers great possibilities like embedding video's, diverse text forms, a large variety of quizzes, and a responsive design for integration of our LibGuides and Camtasia products.

Recently (September 2014) the XOT software was put forward and accepted for incubation by the Apereo Foundation, which means that the sustainability is guaranteed: a big extra plus.

During the project it became clear that we still lacked a member of technical skills like working with Photoshop, and using HTML. So we took some courses to fill in that gap, which resulted in a big leap forward where the quality of our online modules was concerned.

It also became clear that working together when developing the online instruction is the key to success. To increase quality, we organized several feedback rounds with our colleagues, students and teachers. That turned out to be very useful and really helped us to become a team.

However we couldn't have achieved our goal without the education counselors of our university. They gave us advice on e-didactics and the Dutch XOT support group 12Change. We also made use of a design company to draft a set of icons to strengthen the cohesion between our instructions by design. And of course we have maintained the corporate identity as much as possible.

The e-learning page (E-LITE: Electronic Library Instructions To Explore: http://www.ru.nl/ubn/diensten/studie/learning/) is available to the public since April this year. The reactions are very positive so far.

The project is not finished yet: we have to organize the statistics, the workflow of designing and evaluating the modules, and the translations into English among other tasks.

A selection of the topics of our modules:

Introduction in the digital library, plagiarism, PubMed, H-index, PsycInfo, Thomson one, data management for students.

Some modules have been translated: http://www.ru.nl/library/services/study/elearning/

Keywords: information literacy, e-learning, Xerte

### SUSTAINING STUDENT AMBASSADORS: DEVELOPING DIGITAL LITERACIES IN UNDERGRADUATE STUDENTS

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The Student Ambassadors for Digital Literacy (SADL) project at LSE has completed its second year and this paper reports on the evaluation and impact study that was undertaken at the end of this year's project. It provides lessons learnt about how similar projects can best support students, the aspects of digital literacy of most value to students and how effectively students can act as peer support for each other. It also examines the benefits of SADL to LSE staff, including the project team and academic staff. Finally, the paper considers the specific challenges that this project experienced and the implications of sustaining the project in 2015-16 with limited resources and the growing challenges of supporting increasing numbers of students.

SADL began as a pilot project in October 2013 working with two academic departments to explore how to develop digital literacies in undergraduate students. The focus of the project was four interactive workshops attended by students across the academic year. Workshops were designed to teach students aspects of information and digital literacy, but also to provide an opportunity to learn about students' current practices and to encourage them to share ideas. In the second year the project was extended to four academic departments and the number of student ambassadors recruited increased from 20 to 40. Scaling up the project had implications in terms of the resources required to support the project. For example, each workshop was run three times, to ensure all the students were able to attend. The project team was also expanded and the team introduced several new activities including:

Creating four Senior Ambassadors positions, recruited from students on year 1 of the programme who acted as mentors for the current cohort and assisted in delivering workshops.

Launching student projects, which involved students working in four groups, supervised by a senior ambassador and preparing a presentation for the final SADL celebration event. The projects covered the topics: improving learning at LSE; improving Moodle; improving learning spaces and peer support.

The evaluation and impact study carried out from March – June 2015 was more detailed in year 2 of the programme, as the project moved from a pilot phase to a mainstream activity. In year 1, SADL was evaluated using a questionnaire circulated to participating students (Secker and Karnad, 2014). This year it was important to develop a more robust evaluation methodology and to complement the questionnaire data, in-depth interviews were conducted with a wider range of stakeholders. The findings from this study will be presented and the benefits and challenges of creating and maintaining a peer support network, both for staff and students, will be explored. Scaling up information literacy interventions is particularly challenging and the role of Senior Ambassadors in assisting in developing and delivering workshops was significant in year 2 of SADL. The approach taken to evaluate the impact of this programme should also be of interest to the delegates.

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Keywords: digital literacy, peer support, undergraduate students, evaluation, impact, sustainability

### UK INFORMATION LITERACY ADVOCACY: Reaching Out Beyond the Tower

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Our paper provides an overview of recent UK information literacy (IL) initiatives from the CILIP Information Literacy Group (ILG). The UK higher education sector has an enthusiastic and highly skilled group of librarians helping to develop information literate graduates in universities. However, outside this sector, information literacy in schools, public libraries and in the workplace is less well recognized and supported. The UK government has increasingly recognized the importance of "digital skills" or "digital literacy" for the wider population as a whole, linking it to economic prosperity and engaged citizenship. Yet the failure of several recent government reports to define digital literacy (for example the House of Lords, 2015), equating it with computer literacy signals a lack of recognition for the valuable work that information professionals are doing in the information literacy field.

In this paper we provide an overview of the advocacy work the ILG are doing to redress this problem and to ensure that information literacy expertise in the library profession is recognized by the wider community. ILG is emulating the principle of reaching out "outside the tower" (a term coined by de Moree in 2014 to describe how his team took science beyond higher education) to disseminate the value of information literacy outside both higher education and the library profession.

We discuss three recent research projects funded through the ILG bursary scheme launched in April 2014. These projects have focused on "digital literacy" and the role of public libraries, information literacy in the workplace, and information literacy as part of citizenship and young people<sup>1</sup>s political awareness. Each project has included stakeholders outside the library profession and projects were awarded their funding based on the likely impact of the projects and their relevance beyond the library community.

In a related initiative, the ILG agreed to sponsor a high profile Research and IL Award for an initiative run in UK schools, called TeenTech (http://www.teentech.com/). This collaboration came about following ILG's response to a UK government report, Digital Skills for Tomorrow's World (UK Digital Task Force, 2014). TeenTech targets 13-16 year olds and aims to help young people realize the potential of careers in science, technology and engineering. It is an industry-led initiative, running events around the UK for schools and students work on innovative projects, with an annual award ceremony at the Royal Society. The inclusion of a Research and IL Award from 2015 demonstrates TeenTech's recognition of ILG's work and will prove to be a valuable stepping stone to ensuring that IL is more embedded in school's curricula. It also signals that high quality science and technology projects need to be underpinned with the critical use of information and the development of research skills.

Through this paper we will share the experiences of our work to disseminate knowledge, firstly, about IL and secondly, the expertise that librarians and information professionals can provide to those in other sectors. We will share our strategies for IL advocacy and inspire delegates to take action during the final discussion.

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Keywords: advocacy, research, digital literacy, national perspective

### ITERATIVE DESIGN PRINCIPLES FOR LEARNER-CENTRED TUTORIAL DEVELOPMENT

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Creating information literacy tutorials has been a longstanding trend in academic libraries, beginning with static web-based tutorials and moving more recently to video-based tutorials. There is recognition in the academic library community that these tutorials need to follow the guidelines and best practices for usability (Bury & Oud, 2005; Lund & Ole Pors, 2012; Mestre, 2012). Focusing on the user has become critical to the design and development of online tutorials at MacEwan University Library. We have adopted an iterative design process with near-constant usability testing borrowing from the world of software development (Brhel, Meth, Maedche, & Werder, 2015). This has transformed how we provide online learning to our users beyond the out-of-the-box experience offered through tutorial building software.

Since 2010, the library has been building interactive online tutorials using Adobe Captivate. Although we adhered to best practices, usability testing often fell by the wayside in favour of quick production. In autumn 2014, we were led to revolutionise our subsequent approach to interactive tutorial building following the experience and findings of more extensive user testing of our tutorials in the mobile environment. When redesigning our online tutorials for mobile compatibility, we conducted considerable usability testing. While it was clear that we had done many things right, we were disconcerted by the number of user challenges that emerged. Watching our users struggle with frustrating tutorial interactions revealed some serious limitations of our tutorial design, particularly our reliance on the built-in options for interactions. Inspired by the difficulties we witnessed, we adopted a more iterative process of tutorial production, resulting in us conducting more frequent user testing with smaller groups of students, with the ideal being a mix of new and returning testers. This process also involved greater experimentation with the capabilities of the software to develop a more user-friendly experience on all platforms. While tutorial development has become more time consuming, it has ultimately resulted in a more engaging, responsive experience that reflects changing user needs and demands.

In our presentation, we will discuss and share concrete examples of how our iterative approach of routine user experience testing and frequent updates is leading the way to more effective tutorial design at MacEwan University Library.

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Keywords: online tutorials, information literacy, iterative design, accessibility, usability

### How to Organize IL Education for Bulgarian Authors and Publishers of Impact Factor Publications - Project in Progress

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The main goal of this article is to present the problems that authors of research papers and publishers of scholarly journals in Bulgaria face, and how they could be solved by information literacy (IL) education. We analyzed the best worldwide practices and considered the research analytic requirements of Thomson Reuters and Scopus. There are two target groups with different responsibilities and problems during the process of publishing. Publisher's responsibilities can be classified in two main categories. Publishers' responsibilities from the first category *respect the international rules for academic publishing*. The rules are more or less formal and easily followed. The editor should guide the authors on how to write an abstract, what type of CV to present, and how to complete bibliographic information for cited references among other tips. Publishers' responsibilities from the second category deal with *the quality of the articles in the journals*. Achievement of quality and research impact is based on the peer reviewers' process thorough article selection criteria and supplementary improvement of authors' competences. We produced guidelines for the authors and for the peer reviewers. We shared on the website examples of best practices in scholarly journals' publishing and useful tips for editors and reviewers. ScholarOne is the selected pilot product for article and author management and for access to qualified peer reviewers. Publishers are trained how to manage and improve their work-flow. A guide is produced and made available to scientific publishers in Bulgaria where they learn how to publish journals with impact factor ranking. Recommendations are combined with an interactive option with questions, answers and solutions.

Bulgarian research authors and PhD students need to be trained while preparing an article. Their responsibilities can also be classified in two main categories - one with formal rules for abstract and article writing, tables, and graphical presentations and the second with knowledge on impact. A web guide with instructions on such topics is ready. Further we prepare consulting and training modules and publish a booklet. Author training on writing original articles, avoiding misconduct and presenting papers are part of our workshops to improve skills like referencing, indexing, and handling bibliographic descriptions.

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Keywords: information literacy, education, academic publications, interactive applications, integrated virtual training module

## "GREENING" INFORMATION LITERACY THROUGH GAMES

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New Bulgarian University (NBU) has made the strategic choice to become a "Green University" and the NBU Library is working to assert the university's image as a green institution. Our objective is to re-design and deliver library workflow in a paperless format. One of the successfully accomplished initiatives was the environment-protecting "Green Office" that contributed to win "The Best Library 2012" award from the Bulgarian Library and Information Association. Currently, NBU Library is gradually shifting its focus toward adopting new technologies and resources for information literacy. NBU Library pursues arresting training and instruction programs, adhering to our "green line" approach. Academic libraries are often on the forefront of testing and applying new technologies. Two new technological trends in education: BYOD (bring your own device) and games and gamification are steadily being recognized and adopted by Higher Education practitioners and, respectively, are promoted by academic librarians. The growing affordability and access to the Internet, as well as the global penetration of mobile devices across all ages, have transformed e-learning into m-learning (mobile learning). Pedagogy and methodology are in a corresponding process of change. The shift toward online activities on mobile devices brings print reduction.

A jQuery-generated site for mobile devices is used by academic librarians to gamify students' introduction to information literacy. Students are using their mobile devices (smart phones, tablets) to access information through a mobile Web site and are expected to accomplish a set of tasks which reflect their knowledge of literature and research procedures in the library. We seek to achieve: 1) a paperless environment; 2) a dynamic and mobile access to information and feedback; 3) a switch from lecture-based teaching style to a more constructivist approach, and encourage students to build knowledge on their own while pursuing a game-like activity; and 4) better interaction with lecturers in subject-based teaching. The test instruction was adopted from a library project at St. Cloud State University (SCSU) in United States (http://web.stcloudstate.edu/pmiltenoff/bi/). The project was translated and adapted for the students of Financial and Tax Law Courses at NBU. The test instruction presented a viable opportunity to introduce paperless pedagogy and gaming as a legitimate pedagogical practice across disciplines on campus. Employing the combination of jQuery and Google Forms solution allows real-time online assessment, without the necessity to print any data at any moment of the assessment process.

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Keywords: information literacy, m-learning, gamification, green library

### THE EFFECTIVENESS OF FLIPPED INFORMATION LITERACY CLASSES

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The library of the Amsterdam University of Applied Sciences (HvA) increasingly uses the flipped classroom method in offering its information literacy courses. Students instruct themselves prior to face-to-face workshops by watching short videos or following an online course. During the workshops there is more time left for practicing and coaching. As the students prepare themselves at home, most of the time the duration of the workshops can be reduced.

The assumption is that this way of learning is not only more efficient but more effective as well. However, is this assumption correct? Different studies have investigated the effectiveness of flipped information literacy classes. Anderson and May (2010) indicate that all instruction methods (online, face-to-face, blended) are equally effective. Other researchers do advocate the effectiveness of the flipped classroom method (Madden and Martinez, 2015; Maclachlan et al. 2014). While many researchers in other subject areas agree that flipped classrooms are successful, Bishop and Verleger (2013) comment that very little work has been done in investigating student learning outcomes objectively.

The HvA library investigated the effectiveness of its own flipped classroom courses compared to the traditional face-to-face workshops. Results will be used for improving the teaching methods.

We compared two groups of undergraduate aviation students. The first group followed a traditional face-to-face course; the other group used the flipped classroom method. The course load of both groups was identical. Previous studies generally measured student perception or increase in knowledge (Bishop & Verleger, 2013). Comparing the two groups the HvA library aimed to measure differences in skills as well.

I gave a prior presentation at ECIL 2014 in Dubrovnik that emphasized the blended learning program itself. In this presentation I will focus on the effectiveness of the flipped classroom model. I will share results and recommendations for future research.

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**Keywords**: *flipping the classroom, flipped instruction, blended learning, information literacy* 

# SHORT PRESENTATIONS (PECHAKUCHAS)

# Source Evaluation Website as a Tool for Blended Learning

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The Citation Compass (http://kildekompasset.no/english) is an open Internet resource on how to cite and reference correctly. It was launched in 2011 and, in 2014, new funding made it possible to develop the site further.

The resource was developed by Agder University Library, Stavanger University Library, and the library of Telemark University College. The project is funded by the Digital University Program at Agder University. The program aims to promote digitization to enhance quality and efficiency within teaching, administration and research.

The Citation Compass consists of three parts: References, Source Evaluation, and Legislation. The resource is available in Norwegian and English. The Citation Compass aims to present complex information in an easy manner that engages the students through good design and a well-structured user interface. The resource contains short films that accentuate the content. Under References, there is information about the various citation styles. Examples are organized in easily accessible clickable boxes under each style.

The new content area on the Citation Compass - Source Evaluation- offers information on how to critically evaluate different types of information sources. It was launched in May 2015.

It has been a challenge to present this matter in a way that is easy to grasp for the students while at the same time not omitting any pertinent information. The students are invited to reflect on the challenges of source evaluation. We make it clear that they will not find the answers here, but rather they will locate a checklist for what they should consider before deciding to use a source. The resource is divided into different source types: the Internet, books, scientific articles, encyclopedias, newspapers, and public information, with checklists and the possibility for further readings if more information is needed. The resource also contains animations and quizzes to arouse student' interest.

We developed several digital learning resources for users with some knowledge who might want to learn more. The Citation Compass focuses on providing basic knowledge for beginners as well as working as a quick reference tool. The different levels of information makes the information accessible quickly and easily.

The Citation Compass has already attracted an average of over 700 visits per day from all over the world. We believe that some of the success can be attributed to the close cooperation with staff and the connections to the disciplines. The students also find it appealing that the resource gives them quick and targeted information. The design is developed in cooperation with Bouvet, a company with extensive experience in user interfaces and user experience.

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Keywords: blended learning, source evaluation, digital learning resources, open internet resources

### LIBRARY TRENDS IN USER SERVICES AND INFORMATION LITERACY IN DIGITAL AREA

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This study research aims to present the librarians community's efforts, including Albanian library professionals, in the digital environment, in order to fulfill their mission on Information Literacy education and training for different library client groups as an indispensable tool to make possible for citizens the "magic" area trends that new technological infrastructure with its "magic mountain of information" offers. In the light of unstoppable Albanian libraries' trends developments, the paper gives the vital role of the librarian's community in promoting Information Literacy as a signal skill for lifelong learning in various situations and in different user groups in the national library network. In the knowledge society, where a technological "tsunami" is present, the "librarian's orchestra" is playing the role of "first violin".

The first part provides information about new technological library trends, as online catalogue, digitized card catalogues, e-user services, e-bibliography, e-journal, e-magazines, digital library/digital archives, ask a librarian, etc., that took place rapidly in Albania at the beginning of the XXI century, trends that have crumbled library walls, by producing "intelligent" and "hungry" users. Based on questionnaires, a brief review is given to the digital area's different clients needs - some people are overloaded with information while some others are starving for information - "modern" user demands and user competences. In the triangle, trends – users – library, IL is a challenge for librarians who need refocusing to "digital users" belonging to different educational backgrounds. Based to updated Information Literacy module are training librarians as well users by National Library Center , challenge linked to growing influence of media and the professional need for better information and/or knowledge managers.

The second part, related to university, academic and national library official statistical data websites, traces the client's necessity to learn more skills through everyday library instruction on: Web use, digital information, digital content, digital reference, communication environments, e-equipments, - opportunities coming largely from the virtual world. The paper is focused on various and different methods, from open courses offered to students and academic staff, to library orientation, and instruction for using digital services to the local community. Then it moves on to look at the reference librarian's mission of enabling users to benefit from the 20th and 21st centuries' technological achievements, when iPods, iphones, and laptops became present more and more in the country.

The paper concludes that in the age where the user, - old or young, - is going to live with technology Information, Media Literacy is a challenge for the Albanian library community and a great deal of work remains to be done. Preparing "capable drivers" well oriented in the "digital information superhighway" – which is changing more than ever the ways of learning, thinking and communicating -- is also another country's challenge. But I am optimistic, because worldwide, the effects of the librarian's everyday work takes time to appear. It is not so easy to measure success.

Keywords: technological library trends, users, librarians, information literacy

### MEDIA AND INFORMATION LITERACY AS AN Instrument of Ensuring Media Security of Russian Minors in the Social Networks

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#### INTRODUCTION

By the end of the first decade of the XXI century the term "media and information literacy" (MIL) acquired special importance among the concepts associated with information. Ensuring media security of children and youth is one of the directions of the pedagogical movement for the media- and information literacy. It has become particularly important due to the spread of social networks. The aims of this study are to identify educational, legal and media aspects of the problem "Russian children and young people in social networks" and to find ways to solve this urgent problem.

#### METHODS AND PROCEDURES

Due to the heterogeneity of issues addressed in the article, we have to use the set of scientific methods, and the most important of them are: term and lexicological analysis; monitoring the domestic and foreign laws governing the protection of children in the information field; historical, genetic and comparative methods; content analysis of textbooks and didactic documentation and media publications and other information resources.

### RESULTS

Media security is the state of protection of the essential interests of the individual against threats coming from mass media systems. But the level of cyber crime in social networks is extremely high. As a result of our monitoring of judicial practice, all offences committed on social networks can be divided into three groups depending on the socially dangerous consequences they may draw:

The emergence of a civil (financial) responsibility;

The emergence of criminal responsibility;

The emergence of administrative responsibility.

All three groups feature cases in which minors are involved either as the victim or as participant in the criminal intent.

Before 1990 (the year when preliminary censorship was repealed), media security problem in our country was not an issue, since the protection of minors from inappropriate content was provided by censorship authorities simultaneously with their primary goals. But in the post-Soviet era (since 1992) the problem of the protection of children in media has become crucial. This is due to two factors: 1) the country's transition to a capitalist socio-economic system and the corresponding model of the bourgeoiscommercial model of the media that are aimed primarily at making a profit and ready to step over moral values and norms (the phenomenon of "yellow press"); 2) Russia's accession to the Council of Europe in 1996 and its obligation to comply with European standards in the field of human rights.

In December 2010 the act "On the protection of children from information harmful to their health and development" was passed, but most of its requirements actually do not apply to social networks.

#### Conclusion

Media education can be a main means of ensuring the media safety of Russian teenagers in social networks. We are talking about the introduction of compulsory media education, firstly, for future teachers and then for all pupils.

Keywords: media security, social networks, protection of children, media and information literacy

### Linking a Health Science Librarian with an Institutional Mission: Three Collaborations Linking Disciplinary Faculty and Library Faculty

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### Овјестиче

My paper will describe how an academic health sciences librarian has scaled the boundaries of traditional instructional design to participate in three collaborative relationships with disciplinary faculty for the purpose of including information literacy in the curriculum of undergraduate health sciences courses.

### Methods

My project started when a large public university organized meetings for disciplinary faculty to partner with their library liaison in a targeted way in order to review, discuss, and design assignments for second year seminar and milestone courses. As the academic health sciences librarian, I met with disciplinary faculty from public health, kinesiology, and a first year health sciences seminar. Our first step was to conduct a review of course syllabi for each class. I worked with faculty members to align their course outcomes with the university undergraduate learning outcomes. Faculty members also provided me with assignments for review. I closely examined the assignments for the following characteristics: (1) clear learning outcomes; (2) alignment with the university undergraduate learning outcomes; and (3) a match between the goals of the assignments with learning outcomes. I worked with faculty members to: (1) redesign assignments that lacked clear learning outcomes; (2) include university undergraduate learning outcomes with assignments; (3) align assignment goals with learning outcomes; and (4) include information literacy in assignments. In this paper I will describe the processes and outcomes of this work in a second year seminar course, a milestone course, and a first year seminar.

#### RESULTS

I collaborated in designing a proposal for a new course, Public Health 205, during a university organized institute. As a result, the course was approved along with an integrated library instruction session based on the university learning outcomes for undergraduate students and instructor learning outcomes. In 2013-2014 I participated in a Milestone Course Workshop with two Public Health faculty members and a Kinesiology instructor. This resulted in my involvement in assignment design and assignment materials as well as library instruction sessions for the Kinesiology course. Lastly, I participated in a collaboration with the first year health sciences faculty member. The outgrowth of this collaboration was a proposed revision of the course and a forthcoming collaboration on a textbook geared toward first year health sciences students. I continue to work closely on the Kinesiology Milestone course and a revised version of a first year kinesiology course. My work with Public Health 205 has been reduced due to a two-fold increase in the number of courses offered. When I began working with the course there were only four sections; in Fall 2014 there were ten sections for the course. Work with the first year health science course continues, however I will pass on the actual library portion of teaching the course to an undergraduate librarian in Fall 2015.

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Keywords: health science librarians, instructional design, undergraduate students

### ALL I WANT IS TEACHING – CONTRADICTIONS OF an Information Literacy Team Leader

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The aim of this best practice paper is to describe and discuss the challenges and solutions of the management and leadership of information literacy services in a large multidisciplinary university.

On four campuses, the University of Helsinki has eleven faculties with disciplines ranging from veterinary medicine to theology. The number of students is about 35 000. Currently, the number of employees in the Helsinki University Library is about 220 but the number is decreasing steadily.

Helsinki University Library underwent an intensive organizational restructuring process during the past year. This affects information literacy (IL) teachers profoundly: IL teachers got new managers in the new organizational structure and new service directors were appointed. The development and coordination of IL teaching are assigned to the information literacy coordinator, who is a team leader with no responsibilities as administrative manager. Currently team building and restructuring is an ongoing process. The aim is to spread expertise and specialized skills beyond the campus and faculty borders and to form smaller specialist teams who are responsible for the key tasks.

### **Better Services with Less Staff**

The main challenge is how to provide high quality services with less staff. Shifting staff from one task to another is not a sustainable solution. At the same time, the clientele and their needs are changing and the services which used to be excellent are not as feasible any longer. Equal, but discipline sensitive, service level in all faculties is not an easy goal to reach: each faculty has their own traditions and needs and sometimes clients have gotten services which were excellent and personalized but impossible to maintain when the number of staff is decreasing. If the quality of the services is too high, it is very difficult to change the services if both the clients and the library teaching staff are satisfied with the current state of services. We need to convince ourselves that sometimes less is more: doing things differently and teaching less, can improve the quality of the information literacy services.

### **INNOVATIVE LEADING AND COACHING**

One of the challenges of information literacy coordination and leadership is how one leads colleagues without being their manager who can officially assign tasks for the employees. This requires substantive amount of negotiations with all the necessary parties, tactfulness, and coaching skills.

In my presentation, I openly discuss the experiences and methods of the team building and organizational restructuring process and how it has influenced teaching practices. My intention is to bring up both positive and negative experiences which could help participants to benchmark and mirror the situation in their own organizations.

Keywords: academic libraries, information literacy instruction, management, leadership, teams

### **PROFESSIONALLY ORIENTED WEBSITES IN THE MEDIA COMPETENCE FORMATION OF FUTURE EDITORS**

### Yulia Horun

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It is believed that the purpose of media education is to achieve media competence. Theoretically it is possible to increase the level of media competence lifelong through perception and analysis of cognitive, emotional, aesthetic, ethical media information. Today the ability of critical thinking, skills to interpret, analyze and evaluate media texts, to understand their target and purpose are very important for the specialists in various fields, especially for those who work primarily with information. This applies to the editors. Their professional responsibilities include processing large amounts of information, selection of necessary and useful information, critical analysis of it and creation of their own media products. The urgency of the problem of our research is that in Ukraine so far there is no course or separate discipline called "Media competence of editor". Today you can only learn this kind of competence through self-education. Our main objective is to propose as one of the ways to acquire media competence is to use professionally oriented websites which contain materials about media education and related disciplines in the educational process.

Our research deals with the professional competence of the Editor – personal opportunities by which he or she can effectively implement the tasks of the editorial process, harmoniously combining theoretical and practical achievements, required for employment activities. We present a list of the modern editor's competences, which also include media competence. According to it, nowadays the editor has to not only possess professional knowledge and formalized skills, technological methods in a given scope of their work, but also be capable of unconventional, creative, innovative thinking, be able to qualitatively improve productive, organizational, administrative and other processes and types of work, and to reconstruct them by new principles that meet the requirements of time. One of the tasks of this PechaKucha is to define the concept of the editor's media competence. The media competence of an editor is a combination of his knowledge, abilities and skills that contribute to the selection, use, critical analysis, evaluation of information and its creation and transfer in the professional study of works of different types, forms and genres, including media products. In our research we explain how professional qualities, which are required for the editor's professional activity, can be developed with the help of websites that contain certain media tools of the formation of professional skills. Qualities and competencies generated through these sites make up the media competence of the individual. These sites are not only modern information channels, and means of access to the relevant information resources, but also a means of information competence formation. Among the many sites we distinguish are those that are useful to editors in their activities: information portals, blogs, sites with educational materials, translators, dictionaries, evaluation sites etc. They all have specific features that help to shape certain professional skills and abilities of editors. In conclusion we would like to say that although the acquisition of practical experience gradually develops skills and knowledge, the specialist's work will be much more efficient and more effective if we lay the foundations of media competence in education, in order to further enrich specialist professional skills throughout life by means of self-education with use of professionally oriented sites.

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**Keywords**: media competence, media education, professional oriented sites, media information literacy, professional competence of editor

## **CONFESSIONS OF A (RESEARCH) SHOPAHOLIC**

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Many students, whether undergraduate or postgraduate, lack a clear understanding of how to successfully start and complete a research project. Either they suffer from an overly simplistic and non-academic approach ("I'll just google it") or they view research as a complicated and mysterious process which they fear they can never master. Because students often lack a clear understanding of the steps in the research process, they waste a valuable resource -- their time -- as they start and stop and veer off in aimless directions in their quests to complete the desired research outcome, whether it be an essay, presentation, term paper, thesis or dissertation.

*Confessions of a (Research) Shopaholic* is a playful while nonetheless serious slide presentation which distills the *Information Literacy Competency Standards for Higher Education* (established in 2000) of the Association of College & Research Libraries of the American Library Association (ACRL, 2015) and demonstrates how doing research may be taught to students at all levels as a standard five step process. Using shopping -- a process with which students everywhere are inherently familiar -- as a metaphor simplifies the process and helps students internalize the steps. De-mystifying the process in this manner conserves valuable time -- a resource which is usually in very short supply for students -- and at the same time contributes to student confidence and relieves student anxiety.

The five steps of the research process taught in this model are **Define, Locate, Select, Organise** and **Cite**. The model targets both genders by providing comparable examples of interest to females (shopping for a dress to wear for a special occasion) and males (cars). Though stereotypical, nonetheless these are examples with which members of either sex can connect. How doing research is like shopping is demonstrated by graphical comparisons which break down the shopping process and compares it, step-by-step, to the research process. As a counterpoint, examples of bad shopping processes (impulse buying, purchasing counterfeit products) are also compared to unethical research and report-writing processes.

In conclusion, the author's successful experience using this model over a three year period to effectively teach research methods to English-as-a-second-language female Emirati students -- self-proclaimed shopping experts -- is briefly described. Further positive experiences teaching the model to Faculty colleagues both in Professional Development sessions and through publication in Middlesex University Dubai's *Research Matters* journal is cited.

Implications for Information Literacy professionals include learning a new and easily taught research process model that appeals to and is easily understood by students and by teachers alike. It is suggested that the use of a simple model of this nature increases the likelihood of both successful embedding of research methods instruction into cross-disciplinary curriculum *and* student research success, whether the model is taught by a Librarian or Faculty member. Ultimately, the "researcher as shopper" model provides a sustainable, time-saving, and simple yet authoritative method of conducting research and of teaching the research process.

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Keywords: research shopping

### **PROCESS FOR TEACHING INFORMATION LITERACY FOR LIFELONG SUSTAINABLE LIVING - TESTED AND REFINED AFTER 15+ YEARS IN THE CLASSROOM, WORKPLACE, SPORTS FIELD AND DAILY LIVING**

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Even though this PechaKucha is focused on a 15 plus year tested and refined sustainable platform for teaching information literacy (IL) to K-12 students, it is still a work in progress with fresh developments. One of the fresh developments is *Action Literacy* as advanced (and inextricably linked to the future of and new wisdom about, IL), by Zurkowski. *Action Literacy* is the ability to ethically and sustainably act upon good information that has been culled through the IL process for a healthier world. My PechaKucha presentation is intended to be visually exciting and inspiring to those who would like to have access to a tried and true platform/system/process/method for teaching IL/critical thinking in a sustainable way to their students for healthy lifelong decision-making. As part of the platform/system narrated slide show, I will present a criteria/rubric that teachers/librarians/leaders can use to promote twenty-first century learning for any assignment, any subject, and any grade/age. This rubric/criteria is based on a critical thinking code that has been an effective tool for teaching IL to very young students as well as older students. The rubric has provided teachers/librarians/leaders with a method for efficiently grading/evaluating their students' work regardless of subject or grade freeing up valuable time needed for interactive teaching and learning that is so important in today's knowledge societies. More broadly, the critical thinking code is part of an overall platform of sustainable IL for the classroom, the workplace, and for a healthy life.

This platform/system has been effective as a starting point/reference point for presenting IL in a variety of contexts and is endorsed by. Zurkowski, founder of the IL movement. The *in-Formation Literacy Action Platform* is published in the book, *Zurkowski's 40 Year Information Literacy Movement Fueling the Next 40 Years of Action Literacy* (Zurkowski & Kelly 2015).

### **OBJECTIVES**

My objectives are to present in a short, very focused, and inspiring narrated slide show, how I have been successful at teaching sustainable IL via critical thinking to K-12 students since 1999by presenting fresh developments (*Action Literacy*), innovations, and best practices using 20 slides in a visually appealing 6 minutes and 40 seconds. My presentation methodology is a narrated slide show of twenty slides where I will project each slide for twenty seconds.

#### OUTCOMES

Participants will be given the ability to teach IL/*Action Literacy*/critical thinking and the ability to improve the IL/*AL*/critical thinking abilities of their students based on a system/platform that has been tested and developed over 15 years in the public and private school context and 5 years as an apprentice/collaborator with Zurkowski.

**Keywords**: information literacy, action literacy, critical thinking, lifelong learning, 21st Century K-12 education, sustainable learning, daily healthy lifestyle

### Chemical Information IL Course in Long-time Cooperation with Faculty at Tallinn University of Technology

### Gerda Koidla and Maie Pihlakas

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The Tallinn University of Technology (TUT) Library has long traditions of user education, having delivered continuous library user training sessions for fifty years. Training information skills has been a major responsibility of the library subject librarians. Participation in the EU distance education project DEDICATE in the years 1998-1999 raised subject librarians` qualification and helped them develop new training models for graduate students. As a follow-up to this project, two information literacy (IL) courses were started in 2001. Firstly, the Specialized Information Retrieval course to postgraduates of chemistry and materials technology conducted exclusively by the chemical librarian, and secondly, the Chemical Information course in the framework of the selected subject of the Faculty of Chemistry for undergraduate chemistry students, in cooperation with a faculty member. Both courses were embedded into academic curriculum.

This best practice paper presents a case study of TUT, where the IL course Chemical Information for undergraduate students has been successfully taught through collaboration of the library and the faculty for the past fifteen years. During that time the course has been modified several times according to curriculum changes as well as students` performance and their feedback.

The paper focuses on the introduction of the course Chemical Information and surveys the evolution of this course from a traditional face-to-face course to a totally online course in Moodle environment. This current paper describes the course organization, training model, course content and assignments and students assessments.

The course Chemical Information for graduate students of the Faculty of Chemical and Materials Technology at TUT was awarded the "Quality mark of e-course in 2014" prize at the state level.

The experience of the chemical librarian as a tutor of the collaborative IL course for the past fifteen years has been highly valuable and the course format might be applied by other faculties/ libraries to enhance their information literacy e-courses.

Keywords: information literacy, library skills, information literacy cooperation, e-learning

### Information Literacy for Future English Teachers at Vienna University

### Karin Lach

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This contribution addresses the impact of recent information literacy models on my take as the subject librarian of the English and American Studies library at Vienna University on teaching IL (information literacy) in a subject context.

I advocated for including (IL as an important goal to include in a Bachelor of Education (B.Ed.) curriculum for future English teachers. I presented some concepts from *A New Curriculum for Information Literacy (ANCIL)(* Secker and Coonan 2013), an early version of the yet to be filed Association of College & Research Libraries (ACRL) *Framework for Information Literacy for Higher Education* and the UNESCO (United Nations Educational, Scientific and Cultural Organization) MIL (*Media and information literacy curriculum for teachers)* document. In 2014 I joined a group of English department faculty members to discuss what the new *Introduction to Information and Research Literacy* (IRL) course in the B.Ed. should look like. After the group outlined the basic contents and learning objectives for the course, the director of studies tasked me with further developing and holding the lecture. The Metaliteracy model became another inspiration.

The aim of the IRL course is to enable students to understand fundamental concepts and strategies of academic work and of academic best practice. This understanding will be their foundation for creating academic work at later stages of their studies. They should understand the role of IL in their future professional practice as English teachers.

Since my involvement in the implementation and execution of the course coincided with the discussion of three new models of IL (ANCIL, Metaliteracy, Framework), I was able to engage with these as a learner and discussion participant. This involvement helped me identify relevant aspects of these models such as:

putting learners at the centre of a model that describes their development in a new (academic) environment (ANCIL);

seeing the learner's role as a producer of information in an information landscape that includes open educational resources and social media from a behavioural, affective, cognitive and metacognitive perspective (Metaliteracy).

seeing frame concepts as the essential elements in the IL development of students in higher education, such as scholarship as a conversation (Framework).

Making these issues explicit, I enabled my students to become aware of IL components in their future academic and professional lives and to think about their own roles as learners, researchers, and teachers.

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Keywords: teacher education, ANCIL, metaliteracy, ACRL Framework, media and information literacy
## THE BENEFITS OF LEARNING BIBLIOMETRICS ON THE TEACHING LIBRARIANS' INFORMATION LITERACY

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The academic research is increasingly global due to researchers' modern networks and international funding. The sponsors, representing both private and public sector, need information about the effectiveness of the research results. (International, 2010). Academic libraries can be seen as neutral experts to produce background information for the analyses on the scholarly publishing, with respect to its quantity and quality. (Forsman, 2010). The librarians and information specialists can also create a new task of communicating with single researchers. They can help a researcher make his/her research and research merits visible and identified (Kokko & Rajahonka, 2014).

#### **OBJECTIVES**

In most cases, there are only a few experts in libraries with bibliometric skills. Nowadays it is important to share this knowledge among the librarians and information specialists. The aim of this presentation is to describe how an in-service training process can enhance the information specialists' bibliometric expertise and thus reinforce their information literacy skills.

#### Methodology

An internal educational programme on about bibliometrics was launched during spring 2015 at Jyväskylä University Library. It consists of three workshops (altogether ten hours). All seven information specialists participate in it. Their normal duties are to give information literacy instruction to the university's students and work as subject specialists. The aim of the educational programme is to familiarize the participants with the basic concepts, methods, tools, and phenomena related to bibliometrics. The programme is led by the Head of Information Services, and it utilizes the expertise of the Information Specialist in Library Research Services. The training methods are: mutual discussions, interactivity, functionality, and working with peers.

#### OUTCOMES

Because the educational programme is still going on, the outcomes will be reported on the final presentation. At the time of this writing, it is evident that the expertise of the information specialists has been reinforced after the first set of workshops. They have better skills for recognizing the researchers' publishing habits and international collaboration, as well as their identification, visibility, and research merits. Expertise gained may also contribute to new pedagogic and consultative solutions when collaborating with the students and researchers, and in building new knowledge in these situations (McCluskey, 2013).

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**Keywords**: information specialists, librarians, higher education, university libraries, bibliometrics, information literacy, sharing the expertise, in-service training, research services

## HEALTH LITERACY FOR THE ELDERS OVER SIXTY YEARS OLD

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Our proposal seeks to show the importance of understanding the digital skills and the ability to evaluate information of older people to prevent health risks. We observe a large heterogeneity in the skills and practices. Some seniors in our study have digital skills and have a regular practice of information retrieval on the web. The aim of this proposal is to show the firsts results of the RICSA (risque informationnel chez les seniors et automédication/information risk in the senior and automedication) project. It aims to study elders' digital practices and to understand the changes it brings in their everyday life, especially concerning selfmedication. The results are extracted from a national on-line survey and from interviews with people over sixty years old who live in south-west of France.

Several studies (Baker, 2002) highlight the importance of literacy in the case of self-medication to avoid risks, especially for patients with chronic diseases (Al Sayah, 2013). We want to show the close relationship between information literacy and health literacy<sup>6</sup> to practice self-medication. Three levels of health literacy can be described: basic or functional health literacy, communicative or interactive health literacy (Manafo, 2012) and, critical health literacy (Nutbeam, 2000). The third level is needed for understanding the information on websites about health. Critical analysis is as important as the digital skills.

Older people have not been trained in the digital potential, much less the risks of digital websites. They deserve particular attention, especially when their conditions are important. We wish to show how careless information practices may be a source of risky medical practices. We want to show the effects in a digital environment where medical information available on websites facilitates self-medication.

Older people often have difficulties identifying and expressing their need for information because their knowledge and precise vocabulary may be inadequate. So the communicational difficulties can become dangerous in that a poorly mastered query may cause a false interpretation and harmful decision.

Our study also seeks to consider what places (such as libraries and hospitals) and mediations could be devised to avoid information risk faced by seniors.

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Keywords: health literacy, information literacy, digital literacy, seniors, aging, elder people

<sup>6</sup> Healthy people 2010. "Health literacy is the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions." - http://www.healthypeople.gov/

## INFORMATION LITERACY + SUSTAINABLE Development = Searching for Sustainability

#### Joakim Lennartsson, Christian Kleinhenz, Mats Blomberg and Mauritza Jadefrid

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Our paper presents the development of Gothenburg University Library's course, *Searching for sustainability*, that we developed to give students relevant knowledge and tools to acquire the information literacy skills needed within the field of sustainable development. The background on the development of this course is that we considered it important to participate in the University's policy to promote sustainable development through education. The big difference between this and a typical course in information literacy was that it was interdisciplinary and employed flipped and blended learning.

#### OBJECTIVES

Our aim was to turn the students' attention away from the subject content to the more reflective dimensions of information seeking, for example, through encouraging collaboration and discussions about the search process. Recent studies have shown that e-learning is used in a number of university courses to develop student's sustainability literacy (Diamond &Irwin, 2013) and that online learning has "the potential to enhance interdisciplinary learning" (Park &Mills, 2014). Our primary objective was to create a blended information literacy course focused on the interdisciplinary subject sustainable development that is applicable in programmes across the university.

#### THE COURSE

We designed the course as a two-stage rocket consisting of a web-based course taken individually and a collaborative workshop in a classroom setting. In the web-based part, accessible via the LMS, the students followed a fictive student, Sven, who wanted to write a paper on the local issue of sustainable public housing. By following Sven, the students learned how to search interdisciplinarily and gain an understanding of the search process. At the end they were told to search for a given article related to their course assignment, read it, and come up with a research question that they would submit on a PADLET-wall online. During the workshop, students were grouped and started solving the research questions they submitted online and were given IL-related questions as well. At the end of the workshop each group presented their results and explained how they arrived at those results.

#### **Results and Conclusion**

In November 2014, 98 students from the Environmental Science programme and the Environmental Social Science programme attended the course. The students were satisfied overall with the blended design and appreciated the possibility to be able to prepare before the workshop. After this first course offering we noticed that the classroom part could be improved; we have now changed the content in the workshop, in order to further encourage collaborative learning. It seems clear that the blended learning and collaborative learning approach has a lot of positive outcomes, chief among them are the opportunities to enable teachers to make better use of the face-to-face time while encouraging students to be more active. Or as one student put it: *"I enjoyed the variation in how the course was given. You came prepared and could become more immersed in the workshop."* We taught a form of information literacy where together, students, learn to interpret problems, formulate questions, and critically assess results by letting the students be active in the classroom and collaborate in solving interdisciplinary problems

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Keywords: information literacy, sustainable development, collaborative learning, interdisciplinary IL, blended learning

## INFORMATION LITERACY, READING MOTIVATION AND MEDIA Competence: How to Develop the Habitus of Modern Media and Reading-Scout in Libraries and Schools

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In the context of reading promotion as a societal responsibility, municipal libraries represent the outstanding educational partner for primary as well as secondary schools (EU High Level Report 2012). However, over the years, their responsibilities have changed: where they were collectors and providers of print literature designed to facilitate physical access by the general public to educational and entertainment material at low cost through a lending system, today the libraries are increasingly tasked with linking the customer to information that helps the customer solve a problem or identify a specific text (picture, literature, music, film) (Rose 2014). It is all about transmitting and systematizing information. But beside this, especially in municipal libraries as well as in schools, it is still important to impart reading competence in children and to adopt a positive attitude towards text. As part of a research program into cooperation of municipal libraries with educational partners that was organized as blended learning and is part of the German national BISS-Initiative (education within language and literature/Bildung in Sprache und Schrift) employees of municipal libraries as well as teachers from primary and secondary schools were questioned about their selfefficacy in the area of modern reading promotion and media competence. The employees were asked to report on their personal development from having acquired new competencies through completing half-standardized questionnaires to gauge their own competencies and job profiles before and after the one-year training (Hellenschmidt and Marci-Boehncke 2012). Reinforced by current research findings (Bos 2011; Bos 2014; Vodafone Stiftung 2012), we will compare - based on our own data - the extent to which library employees as well as teachers are aware of these new areas of responsibility, how they react to them, and their degree of success in adapting through blended learning based training to the changing demands of their jobs. Pierre Bourdieu's capital forms and habitus theory (Bourdieu 1982) formed the backdrop for this study. We were especially interested in examining which forms of capital exist and must be changed if the field - here defined as education in collaboration with the library - is to be permanently altered.

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Keywords: information literacy, blended-learning, media competence, reading motivation, teachers, libraries

## **Retention of Digital Literacy Skills by Lifelong Learners**

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#### BACKGROUND

The Open University of Japan (OUJ) began offering a face-to-face digital literacy training (DLT) course at each study center in the second semester of 2010 to help students use personal computers (PC) and the Internet. A series of checklist surveys was conducted before and after each DLT course to assess the achievement of learning outcomes.

#### **Purpose of the Study**

This study identifies the degree to which students' digital literacy skills changed one to three years following the completion of the DLT course. We also intended to discover those practices that helped students to retain these skills in order to refine the DLT course contents and care for the students after graduation from the course.

#### Метнор

We sent a survey questionnaire on November 10, 2013, to 2,112 OUJ students who had taken a DLT course between the second semester of 2010 and the first semester of 2013 and had OUJ student status in September 2013. The questionnaire included questions on frequency and purpose of PC and Internet usage, opportunities to learn digital literacy skills after the DLT course, as well as the same items assessing learning outcomes that had been on the checklist. Recipients were requested to provide hand written responses using surface mail or submit responses via a dedicated Web site on or before November 30, 2013. We received 1,153 responses (1,038 by surface mail and 115 online) by March 31, 2014. With the removal of 22 responses in which most of the items were left blank, 1,133 effective responses were used for data analysis. The response rate was 54%.

#### FINDINGS AND DISCUSSION

Eighteen items in the checklist measure DLT students' digital literacy skills as reflected in their learning outcomes using a fivepoint Likert scale. A statistical analysis, using Wilcoxon sighed-rank test for correlated samples, was conducted to compare posttest and survey scores. The results indicate 16 of 18 digital literacy (DL) skills with statistically significant differences at p < .005. Students' perceived ability to "input Japanese letters using a keyboard" had significantly improved after taking the DLT course. The results indicate that with the exception of "able to copy, save, delete, and move files," scores for all items of digital literacy skills had declined.

We also analyzed the relations between students' ICT skills and PC usage, Internet usage, as well as continuous learning using  $X^2$  test. We found students who used a PC and the Internet more frequently maintained their DL skills. Students who continue learning through self-instruction, peer learning in the community, and a televised DLT course helped them maintain or improve their DL skills as well.

These results are useful in planning post-course services for DLT students. We recommend that students take the televised course to retain their digital literacy skills acquired in the course. Because many study centers have their own PC circles, we prompt students to join one to have the opportunity for peer learning. We may also need to establish a PC circle if there is no learning community at the study center.

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Keywords: digital literacy, learning outcomes, peer learning, lifelong learners

## Smart Partnerships for the Development and Delivery of Sustainable Information Literacy Programmes: Experiences of Selected Universities in South Africa

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The provision of Information literacy (IL) skills to students has a goal of benefitting other courses which the students are engaged. Information Literacy may be seen as a trans-disciplinary issue which is contextual and can be put to use across different subjects (Shenton & Hay-Gibson, 2011). With this goal in mind, Library and Information workers should not work alone. There is a "need for partnerships in IL as it is of key importance to all educational stakeholders", including faculty, librarians and administrators. Smart partnerships between academic libraries and the faculty have to be forged in order to realize the dream of an information literate University community. Smart partnerships in this study refer to collaboration between faculty and the library, which result in powerful and high impact information literacy programmes at universities. Powerful and high impact IL programmes imply sustainable programmes that have the full support of university management, faculty and librarians. Such sustainable programmes will be recognized by way of a policy providing guidelines on how IL should be conducted and the resources that would be required. Furthermore, the mission statements of universities in general and libraries in particular should adequately address the aspect of IL as a sign of commitment to its provision on campus. Without commitment of management and faculty, IL programmes at universities will be difficult to sustain, hence it is imperative to enlist the support of all stakeholders for them to be smart and sustainable.

The main aim of this study is to find out what smart partnerships exist among the library, faculty and administration in South African Universities, particularly focusing on development and delivery of quality and sustainable information literacy programmes. The objectives of the study include: finding out whether smart and sustainable information literacy partnerships among faculty, library and administration exist at the selected South African universities; establish who is responsible for planning and designing the curriculum for information literacy; find out who teaches information literacy and the components that are covered in the programmes; and identify opportunities and challenges of developing and delivering information literacy at the selected South African universities. South Africa has 26 Universities with three of them having been established in the past two years. Using purposive sampling technique, 10 of the 26 Universities will be surveyed using a questionnaire. The findings of this study will help policy makers craft smart and sustainable information literacy policies and programmes.

Keywords: smart partnerships, information literacy, universities, South Africa

## How Much do First Year Undergraduate Students in Norway Know about Information Literacy?

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This PechaKucha presents the findings of our recent research which documents new students' information literacy (IL) skills at a typical Norwegian university college. Before receiving the library's courses in IL, new undergraduate students completed a survey which measured their levels of competence in three areas:

- critically evaluating sources
- avoiding plagiarism
- citing sources

Our research questions were designed to best reflect the content of the library course "Sources of information and how to cite them". Respondents also assessed their own abilities in the three focus areas and we compared these self-assessments to their actual levels of knowledge.

This study is the first of its kind in Norway, as previous research has mainly focused on how new students search for literature. Results provide an indication of the level of IL skills of new students not only at our institution, but perhaps also for other university colleges in Norway. We discuss the significance of the results, given the fact that Norwegian society in general, including its education system, is considered quite advanced.

Our results document that new students are more skilled at evaluating information sources than at citing them correctly. There is much confusion about when it is necessary to cite a source and which type of information is required in in-text citations and references. Students commonly cite sources of easily found facts, although this is unnecessary, yet neglect to cite previous research, which is clearly mandatory. In addition, many new students lack essential skills and have little knowledge about plagiarism and how to avoid it, despite the fact that they assess their own abilities as quite good in this respect. Survey questions measured both formal and ethical aspects of plagiarism, and answers reveal that plagiarism may often be committed unintentionally.

We found, not surprisingly, that those students who have had some previous higher education possess more knowledge and higher skill levels than those coming directly from upper secondary school, in all three focus areas.

Results can help us to improve library instruction by focusing on those areas in which students lack essential knowledge and skills for academic writing. A stronger focus on avoiding plagiarism, and on how and when to cite sources, is clearly necessary for new undergraduate students.

Keywords: students, information literacy, library instruction, source evaluation, plagiarism, citing, Norway

## FACULTY/LIBRARIANS COLLABORATION TOWARD Developing Information Literacy, Self-efficacy of Undergraduate Academic Skills and Labour Market Expectation in Nigeria Universities

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Information Literacy is a critical input especially in today's higher learning environment and indeed for lifelong learning. Information literacy skills depend largely on an inherent element such as self-efficacy. This paper examined the effective collaboration between the faculty/librarians on a successful deployment of information literacy, self-efficacy in enhancing undergraduate students' academic skills in meeting labour market expectations of Nigerian graduates. The study analyzed the entrepreneurship skills acquisition content of GST curriculum for undergraduates in Nigerian Universities. Existing literature was reviewed to establish any gaps. The population of the study was all the final year students of 2014/2015 academic session who were exposed to the entrepreneurial skill GST curriculum. The study involved 240 final year students randomly selected from the six federal universities from the existing six geo-political zones of the federation. Ex-post facto design was used for the study. A well validated instrument, students' opinion questionnaire was used for data collection. Using an instrument tagged Information literacy and Self-efficacy questionnaire (ILSQ) with reliability values: (a = 0.79) information literacy and (a = 0.78) self-efficacy using Cronbach Alpha method. All questionnaires were returned, however 226 (94%) were found usable. The reliability of the studies was ascertained using Cronbatch Alpha Correlation Co-efficient. Pearson Product Moment Correlation Co-efficient was used for data analysis. The study found that respondents had high self-efficacy beliefs on more items on the scale; the level of information literacy was high in nine of the fifteen indicators on the scale. There was no significant difference in the information literacy of undergraduates and their academic skills (t=2.28; df = 97; p<0.05). There was no significant difference between the effort of faculty members and librarians in developing entrepreneurship skills of undergraduate students (t = 2.26; df = 98; p<0.05). There is significant difference in literacy skills and self-efficacy of students based on self-reliant and job expectation (t = 0.083; df = 97; p > 0.05). The study further revealed that the final year students could identify the content of the general entrepreneurship curriculum, and were exposed to the practical aspects of the skills due to collaboration skills acquired from both faculty and librarians. The study recommends constant standardized information literacy competency training along with the entrepreneurship skill introduced by NUC into Nigerian university curriculum. Finally, governments and corporate bodies in Nigeria must provide support by investing in entrepreneurial skills acquisition of undergraduate students in Nigeria's higher education institutions, as well as during the one year mandatory service.

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Keywords: collaboration, information literacy self-efficacy, academic skill, labour market, Nigeria

## THE WOMEN INTERNATIONAL HOUSE OF TRIESTE: A Hub of Projects for the Immigrants' Literacy and Support to Parenthood

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The Women International House of Trieste is a place run by and for women, regardless of age, social and ethnic origin. It is a point of reference and stimulus to the political and programming action of institutions. Here I will present two of the most successful projects carried out recently by the House.

#### **COMCITA Project**

The main difficulty for immigrant women in their role of citizens and mothers is the poor knowledge of the Italian language, which is a fundamental tool to help themselves and their children grow well in their new country.

The Trieste Province was already active in this area, but this Project wanted to focus on four fundamental issues: 1) to teach basic Italian language; 2) to promote the use of health facilities and services for women and children; 3) to develop citizenship skills; 4) to develop knowledge of the territory. It was devised for foreign women living in the Trieste province who had a low level literacy or a totally different literacy, coming from: Bangladesh, Senegal, Arab countries, China, Eritrea, Liberia, Sudan, Niger, Thailand, Tunisia, Kosovo, Japan, Somalia, Palestine, Egypt, and Algeria.

#### COMCITA Reloaded: Support to Immigrants' Parenthood

This second project started in October 2013 when the International Women House staff met the teaching staff of the school "Divisione Julia" in order to discuss in detail the commitments of the project. It ended on the 24th of September 2014 with the final meeting at the school.

It was focused on immigrant parents, and its goals aimed at: 1) helping them develop relational and organizational skills in order to work with the schools; 2) helping them know the basic rules that provide access to the educational structures, and their functions; 3) providing parents with basic educational tools and methods in order to be able to help their children with their homework' while, at the same time, gaining better knowledge of the Italian language.

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Keywords: access to information, women empowerment, international women houses, non-formal learning, literacy

## INTEGRATING INFORMATION LITERACY INTO CORE CURRICULUM FOR GEODESY STUDENTS AT UACEG, BULGARIA

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The paper presents the process of creation of a digital database of cartographic editions for students from the Faculty of Geodesy of the University of Architecture, Civil Engineering and Geodesy (UACEG) in Bulgaria. Learning to work with the database is an essential part of the specialized courses in information literacy, which the Library Information Centre at UACEG has conducted according to its own established methodology since 2008.

The maps are figuratively presented as a geo-information character model, which can be perceived as a knowledge tool and a method for analog modeling of reality and also a means of transmission of information in digital form. The aforementioned characteristic is one of the important features of maps in general and is emphasized by the applied subjects taught at the university. This aspect requires the acquisition and development of good map-reading skills in geodesy students. The map as a model has unique properties and heuristic epistemic potential, and can be used as an effective means of accumulation, transformation and transmission of information.

The paper also aims to identify innovative teaching and learning methods and techniques for assessing students' skills for extracting information from cartographic sources. Practical training for geodesy students in working with maps is an important component of information literacy training and a basis for lifelong learning in that field. It can be successfully applied in new research areas such as semiotics mapping, cartographic informatics and psychophysical studies.

Information literacy is established as an essential skill. It represents a set of competencies necessary for academic and professional development and represents an important basis for lifelong learning. Therefore these skills are being developed at every educational level, but mostly during higher education. The Library Information Centre's training programme in information literacy is established upon realization of the role of the university and its responsibility for enhancement of these skills. Modern forms of literacy require the continuous improvement of the model, so in 2014, in collaboration with geodesy professors at UACEG, we developed the database of cartographic editions presented in this paper. One of the main objectives of this project is aimed at providing the undergraduate community with an online collection of maps that will ultimately result in the same quality education as face-to-face instruction and effectively assist students in building their expertise.

Keywords: information literacy, digital database, cartographic editions

## WORKPLACE INFORMATION LITERACY: EXAMINATION OF LIBRARY SOFTWARE DESIGNER'S TEAM

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#### OBJECTIVE

Information literacy and the spectrum of competencies it entails constitute important criteria for workforce evaluation. Library software design is a profession that ties in directly with Information literacy and information technology competencies. The "software designer" role within a library design process is still a crucial one in Iran. Library software designers directly affect the quality of software since they develop the very links between the library software core with end users. Thus the more the software designer is aware the information literacy skill sets, the greater the possibility of better and more efficient software. Yet the challenge lies in the diversity of information literacy models and definitions that cannot be easily "locked and loaded" to address different contexts. The present study provides an outline of the research currently underway to arrive at a model of information literacy corpus for library software design team.

#### Methodology

The present research deployed a combination of qualitative and quantitative methods. The first step involved discovery of the concept of information literacy derived from the viewpoint of the research population. The next step involved ranking these factors from the perspective of the larger (stakeholder) community that includes library software designers in large scale. Degrees of importance for each component are determined by analyzing the points of view expressed by experts in the field. A semi-structured interview is the main data collection tool. It will also provide a model of information literacy. Data analysis will help develop a more fine-tuned questionnaire. The research population contains a library software design team comprised of "system developer" "system analyst", "software architect" and "graphic artist". The sampling method is Snowball sampling and Respondent-driven sampling.

#### DISCUSSION

The importance of this research can be proposed in two areas: workplace context and education context. In the workplace, employees who work as library software designers, will know the skills required for this job. Also employers have a framework to evaluate the skills of these people. The proposed model can also be deployed in educational courses serving as the basis for training software design specialists in higher education.

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Keywords: information literacy, workplace, library software designer, contextual research

## THE RELATIONSHIP BETWEEN INFORMATION LITERACY AND Critical Thinking and Self Directed Learning of Undergraduate Students (Case Study: Razi University)

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Information literacy is one of the most basic needs of life in the information society. On the other hand, one of the factors that help people use information effectively accessing information is easy (Google or whatever). Using information effectively demands critical thinking skills. Along with life-long learning, its development is considered the one of the most important goals of education in the technology era. This is common to all disciplines, to all learning environments, and to all levels of education. It enables learners to master content and extend their investigations, become more self-directed, and assume greater control over their own learning. The main purpose of this research was to study the relationship between information literacy and critical thinking and self-directed learning of undergraduate students. Correlation method was used. The statistical population comprised all students in the Razi University. Using systematic random sampling method and based on Morgan table sampling size recommendations about 330 students were selected as the study sample. For data collection, the California Critical Thinking questionnaire (B Form) and information literacy questionnaire and a self-directed learning questionnaire, both created by the researcher for this study, were used. Reliability of the critical thinking questionnaire was assessed 0.69 using Kuder-Richardson and reliability of the information literacy questionnaire was assessed 0.79 using Cronbach's alpha. To assess the validity of the three questionnaires face validity was used using expert consensus. Obtained data were analyzed using SPSS 19 software. The collected data were analyzed using descriptive indices t-test and Pearson correlation coefficient. Findings showed there was a significant correlation between critical thinking and information literacy scores. Therefore, promotion of information literacy skill in students depends on the process of critical thinking. Also there was a direct and significant correlation between the subcomponents of the evaluation, inference, analysis, deductive and inductive reasoning with information literacy. There is also a positive significant relation between information literacy and student self-directed learning (r=./47), student GPA(r=./45), and between student self-directed learning and their GPA(r=./41) but there is not any significant relation between age and gender with information literacy.

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Keywords: information literacy, critical thinking, self-directed learning, Razi University

# Posters

## Assessing Legal Information Literacy in Legal Education in Nigeria

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The role of lawyers in any democratic society cannot be over emphasised. This is so because lawyers as judges, in private or corporate practice, in academia, or in government shape the society and the lives of their fellow human beings. In Nigeria, lawyers' roles are most visible in litigation To this end, the quality of justice achieved lies in the quality of decisions of the courts. Decisions are mainly based on the quality of arguments presented before the judges coupled with the ability of the judges to apply legal reasoning to facts laid before them. All this comes down to the quality of legal education in the country and this quality can be determined based on the information literacy in the process of legal training. Being a lawyer calls for broad information literacy skills that make it easy to garner necessary information required for any research a lawyer may undertake. The ability to analyze problems, determine the information needed, and effectively communicate results obtained is the crux of any legal research; these are essential skills for every lawyer. The complex structure of legal information can pose a major challenge to the researcher in terms of comprehending the hierarchical organisation systems of legal sources. Information literacy as an intellectual framework for identifying, understanding, evaluating, and using information is receiving academic attention globally. The curriculum of legal education in most tertiary institutions in Africa show that limited efforts seem to have been made towards integrating information literacy into legal education. In this paper I will argue for the need to create awareness of information literacy in legal education in the light of the influence of globalisation of legal education and practice with a view to achieving access to legal information and to the teaching of law. I will also examine the importance of legal information literacy and the need for aspiring lawyers in Nigeria to be fully equipped in their skills development.

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**Keywords**: Nigeria, information literacy, legal profession, curriculum, legal education

## Are Social Networking Sites Information Sources? Why High School Students Use Social Networking Sites

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Statistics show that social networking sites (SNS), such as Facebook or Twitter, are widely used, especially by teens who are among the earliest adopters of web based services. So far, research has mainly focused on the social uses of these SNS, aiming to describe the nature and processes of a "digital sociability" (Cardon Delaunay-Teterel, 2006, Boyd, 2014). SNS, though, can also be thought of as an "information ground" (Counts Fischer, 2010). This is evident when information practices with SNS have been described in some studies with undergraduate university students (e.g. Kim & al, 2011; Kim Sin, 2014). Furthermore, teens, as information searchers, frequently rely on easily accessible sources even though the trustworthiness of information is questionable. Academic uses of SNS such as Facebook have been already been demonstrated, for example, for carrying out collaborative assignments (Lampe & al, 2011). However, less is known about the situation of use of SNS by younger students. Social networking sites may be perceived as a threat for children and teenagers rather than a method for teaching and learning. Their use has sometimes been prohibited and/or dismissed as games or "teen stuff," clearly differentiated from serious work done at school. This discrepancy can contribute to the "participation gap" mentioned by Jenkins and colleagues (2006). Further research is needed to understand why young people, including high school students, really use SNS, given the availability, and increasingly popularity, of information and comments on user generated content. Do they use SNS in order to search/find out information? What kind of SNS do they use for what informational purposes? We need to better understand these issues in order to understand the reality of teens' digital habits and adapt appropriate and effective information literacy (IL) training or frameworks.

In our study, we highlighted the importance of considering how young people may use SNS as information sources for everyday life information as well as for academic and school oriented information. We wanted to know if high school teens use SNS for information purposes and to understand what their reasons might be for doing so.

We collected data from students through administering online individual questionnaires and semi structured interviews of 15 to 19-year-olds. By 5 April 2015, 436 respondents from 10 different countries mostly from France and the UK returned completed surveys. Our first results showed that high-school students clearly use SNS to find out information. They browsed such services to seek information for personal interests such as friends' activities, cultural events, international breaking news or games but they also went to these sites to find out information related to school projects. We will provide more detailed findings of our study in our presentation.

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Keywords: SNS, information practices, high-school students, IL frameworks

## INFORMATION NEEDS AND SEEKING BEHAVIOR OF THE NURSES AT RAJSHAHI MEDICAL COLLEGE HOSPITAL, BANGLADESH: AN Exploratory Study from a Different Theoretical Lens

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We focused this study on the information needs and information seeking behavior of the nurses of Rajshahi Medical College Hospital, Bangladesh. We used a quantitative approach to explore the nurses' preferences regarding various information sources, channels, methods, library use patterns, convenient study places, satisfaction level, and problems they encountered. We designed and distributed a structured questionnaire to gather the needed data.

We anticipated that the nurses' information need and information-seeking behaviors were influenced by two theories. From a conceptual point of view, the nurses' behavioral paradigm is linked to Experiential Based Theories and is explained through the concept of "Communities of Practice (Wenger, 1999)." One of our research questions asked whether the nurses, who are living in the era of modern information technology, were habituated to share their gathered experience within their community or whether they experienced no "Communities of Practice" phenomena. Our focus was to assess whether the nurses followed a continuous process of "Collaborative Learning" within the "Communities of Practice" or not. Another theory that served as background to the study was whether the nurses' information needs and information seeking behavior could be interpreted according to Vygotsky's view of observational learning theory or social learning theory (Vygotsky, 1978; Barker, Quennerstedt & Annerstedt, 2015). We analyzed the empirical results to determine whether the nurses' needs and information seeking behavior or their actions extended beyond traditional approaches or more aptly described as neo-traditional attitudes.

Our results revealed that a majority of the nurses were not satisfied with the provision for their queries in their Medical College Hospital. They showed dissatisfaction regarding the sources. They preferred information in print form for research, assignments, and other academic purposes. We also found that the nurses were dissatisfied regarding information technology (IT) facilities. In other words, they felt shortcomings in computer and Internet use in their fields. Most of the nurses built personal collections at homes and within the computer center to meet their academic and research needs. We suggested planning better user-oriented services starting with the provision of IT-based sources and facilities. Our final findings involved analyzing three attitude tendencies the nurses expressed in their information seeking behavior to assess whether they followed traditional, neo-traditional or beyond traditional practices. Our study further examined the role of new information environments in the information seeking process and finished with recommendations based on the research findings with suggestions for future research originating from the present study.

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Keywords: nurses, information seeking behavior, community of practice (CoP), social learning theory, Rajshahi medical college hospital

### JOINT EFFORTS LEAD TO CREATIVE PARTNERSHIPS: Secondary, Higher Education and Non-Profit Organization Experts Working Together to Develop a Cooperative Information Literacy Program for High School Students in Greece

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This poster aims to present the development and the ongoing progress of a cooperative Information Literacy Program which constitutes an expansion of the Information Literacy Program of Eugenides Foundation Library (EFL). The program was established on a wide participation basis (teachers, librarians, faculty members of various institutions, information technology experts) and in the first phase includes the active synergy of another library, the Panteion University of Social and Political Sciences Library. The program's scope is to enhance the cultivation of information literacy skills of students, and make smoother their transition from high school through universities, and further strengthen their research abilities for their entire life.

The objectives and the content of the program were decided upon jointly in an effort to fulfill the informational needs of both students and their teachers as these needs had been formulated in the last two years of educational reform and practice. In 2011 the research/project work was officially introduced in the first and the second grade of high school in Greece as a separate, multi-tasked and mostly interdisciplinary course. The course was introduced with the assumption that the Internet could replace library collections and services, but soon after teachers realized the need of libraries' support. A new challenge emerged that led several teachers to seek libraries capable of giving answers to these needs. The first crucial step of joining forces was made.

Approximately 600 high school students accompanied by their teachers attended the Information Literacy Program of EFL over a two year time. In late 2014, due to fresh conceptualizations, a new approach was driven. Wider cooperative schemes were included in the philosophy of this new approach which focus on the training of all involved partners in the spirit of the model of collaborative and active learning. All participants were considered equally receptive to learning how to learn together.

A team of experts from both secondary and higher education institutions committed to the idea of joining forces in order to strengthen the information and digital competencies of those who will be tomorrow's higher education students. The main objective derived by the common belief that students should be at the heart of the methodological approach so that defining learning outcomes could better meet their real requirements. The first phase of the program (June 2015 - end of school year) includes two workshops organized by four librarians (two from each library) and was planned to take place in the libraries' environment. Forty teachers are invited to participate in the workshops and train in fully exploiting the available informational structure in any possible means. The first phase ends up with the finalization of the action plan for the next school year (September 2015-June 2016).

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Keywords: information literacy, research skills, Greek secondary education, collaborative partnerships, active learning

## INFORMATION-SEEKING BEHAVIOR OF THE GOOGLE GENERATION

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Virtual transformation has greatly affected everybody's lifestyle and changed various kinds of behaviors such as entertaining, shopping, information-seeking, researching, making friends and so on. Although these changes and developments happened in a quite short time period, it is difficult for children and youth of today – "the Google Generation"- to imagine a world without the internet (Nicholas, Rowlands, Clark and Williams, 2011, p.28).

Ashraf (2009, p.343) defined this new world as always online/never offline, connected to the internet all the time, listening to music alone with headphones on but somehow cooperating with other people online, and always informed about other people through social media.

Library practices have become more user-oriented due to this transformation. One of the difficulties that libraries have to face nowadays is to develop collections and services that will meet the requirements of multi-user generations with different approaches to seeking information (Silipigni-Connaway, Radford, Dickey, Williams and Confer, 2008, pp.123-124).

According to the literature, the Google Generation (born after 1993) has some distinctive information requirements and information seeking behavior features. The aim of this study is to present whether the sample in this study has these requirements and distinctive features. For this purpose, interviews were practiced with four university students who attend to a private English course in Ankara. The interviews were recorded and then decoded. Content analysis which is a qualitative research method was used. With respect to the findings obtained from the interviews, it was seen that all participants represent the typical features of the Google Generation. Also recommendations were provided for parents, teachers and librarians in the results of the study since adults are responsible for introducing reliable information sources to children.

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Keywords: Google, the Google generation, digital natives, the internet, information-seeking behavior

## IF NOT AT SCHOOL, WHERE? IL AS A STIMULUS TO MAINTAIN "THE UNRIPE EAR"

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The University of Bologna's "IL-for-ALL" project exists thanks to the librarian workgroup of which the authors are members. The project includes creating an information literacy (IL) seminar that is compulsory for most of our 15,000 freshmen enrolled in 207 different courses across five cities. The idea behind the project was to offer a similar seminar experience to each student whether he or she lives in Bologna or Rimini and whether the student is studying engineering or fashion culture. The seminar module is a six hour course offered in 74 sections per year by 60 trainer librarians with 30 to 40 students enrolled per section. The workgroup was formed to create guidelines for a presentation format that could be reused by all colleagues, anywhere, anytime. It was therefore necessary to maintain, as close as possible, uniform content knowing that in any one seminar the audience might include future architects and doctors sitting side by side with future biologists and psychologists. We also believed that the structure of the seminar should not only transmit information skills but also devote space and time to educate students to serve the common good.

Taking a cue from the "smart lifestyle and environmental sustainability" conference theme for ECIL 2015, the aim of our work was to contextualize all our IL interventions using examples related to sustainability. Students in the different disciplines created bibliographies and identified research topics with related keywords and synonyms related to research examples in sustainability.

IL is not a single subject among others: it has a high potential for interdisciplinary involvement. Through IL, students got in touch with reality, act on it, as well as build and modify their mental schemes. The school context is a space that can become as big as the world. The power within IL is like the effect of tossing a pebble in the pond: it is a generative force from which may arise other knowledge. IL is a flexible tool that offers multiple possibilities of combining verbalization tasks with experience contexts.

We took inspiration from the work of the great Italian writer Gianni Rodari's book, *The Unripe Ear* (Rodari1979) in which he tried to free both children and adults from arbitrary limitations. He emphasized the need for everyone to open their eyes and ears to learn to live in peace in the environment that surrounds us. That is the essence of the common good. We tried to bring forward his idea of democratic function of knowledge as the starting point for any scientific training. This belief encouraged us to develop IL as a laboratory of assembly and disassembly of search strings oriented to the common good. The stimuli we offered were the examples of research topics and bibliographies to be sought and built. Rodari argued that fantasy is used to explore the reality (Rodari 1973), to make assumptions also needed by scientists to imagine things that do not yet exist and discover them, to imagine a better world than we live in and get to work to build it. Our work and that of the students in our classes illustrated that IL can contribute greatly to the common good.

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Keywords: sustainability, example topics, lateral thinking

# **Do All Roads Lead to Rome? Have We Integrated Information Literacy into the Curriculum?**

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The following poster presentation is based on four focus group discussions with faculty members and librarians from different member institutions of the AMICAL Consortium, an international consortium of American-model and liberal arts institutions of higher learning outside of the US. They will take place in May 2015 at the AMICAL conference in Bulgaria.

The aims of the focus group discussions are to learn about information literacy (IL) at AMICAL institutions from the librarians' and faculty's points of view in order to picture the situation of IL within the consortium. Special focus will be given to inroads and barriers of IL into the curriculum, how IL is integrated into the classroom, and librarian-faculty collaboration. Given the fact that the participants of the focus group discussions will be coming from different AMICAL member institutions (within different cultural settings), it will be of high value to compare the differences, similarities, and best practices with regard to needs, barriers, and ways IL is integrated in the diverse contexts. Adding to the international perspective and by crossing the faculty view point with the librarian view point within their respective settings, the aim is to discover different and/or similar values, logic(s), and actions of librarians and faculty at the different institutions. The gathered data will be analyzed using Pierre Bourdieu's field concept (1993, 1998) and Mary Douglas' work on *How Institutions Think* (1986) which will inspect both points of view regarding the same topic, IL (Babbie, p. 8). The findings will be ready to be presented during the ECIL 2015 in order to answer the title questions. Our thesis is that indeed, there are many roads that lead to integrating IL into the curriculum and the classroom. However, by hearing and comparing the different storylines side by side, we believe as well that there are some strategies that are more likely to be successful than others, especially in the light of the IL. Threshold concepts. We want to identify the barriers that block the roads to successful IL integration. A special emphasis is given to pragmatic roadblocks (Stoepel 2010).

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**Keywords**: faculty focus groups, librarian focus groups, information literacy, information literacy & curriculum, librarian-faculty collaboration

## **CREATING EFFECTIVE INSTRUCTIONAL MATERIALS WITH I-LEARN**

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With the proliferation of information and the lifelong importance of information literacy and critical thinking skills, librarians need to know how to best design information literacy instructional materials in order to help students locate, evaluate, and use information effectively. This poster will describe how I-LEARN (Neuman, 2011) can be used to design course guides and online learning modules. This is a follow-up to a presentation (Greenwell, 2014) describing an experimental research study (Greenwell, 2013) conducted to determine how instructional materials designed using the I-LEARN model could increase undergraduate student understanding and application of information literacy concepts. One of the findings from the initial study showed that designing instructional materials using I-LEARN was particularly promising given the frequency that undergraduates consulted the I-LEARN-designed materials as well as their positive reactions to the I-LEARN-designed materials on the participant survey. The I-LEARN model provides an easy-to-use framework for developing reusable online course guide or tutorial content.

This poster will show colorful examples of course guides and online learning modules designed using the I-LEARN instructional design model as the framework. While examples from various subject disciplines will be displayed, the poster will focus primarily on one implementation of I-LEARN instructional materials in an undergraduate interpersonal communication and social media course. The poster will describe what students perceived as the benefits from using the I-LEARN-designed course guide and provide a general discussion of their performance on a writing assignment after use of the guide. Visiting this poster will provide attendees with inspiration and specific examples to create their own materials using the I-LEARN template. As this is a work in progress, the author can provide updates on the current status of other implementations of I-LEARN-designed modules in the Canvas and Blackboard learning management systems, in addition to Springshare LibGuides.

The I-LEARN instructional design model is built upon information science and instructional design theory and practice. The I-LEARN model includes the following components: identify, locate, evaluate, apply, reflect, and know. The model is not just a library information literacy skills model; it is a learning model which could be applied in a variety of situations focused in nearly any subject. In addition to its strong theoretical foundation from both fields, 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.

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

## **COOPERATIVE INFORMATION SKILLS TEACHING IN A MERGED UNIVERSITY LIBRARY**

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At the beginning of the year 2010, the University of Joensuu and the University of Kuopio merged into the University of Eastern Finland. The University and the University Library operate on three different campuses at about 150 kilometers distance from each other, which provides a challenge for working together as a team. The lack of communication between colleagues might cause problems, while the distance might cause a lot of travelling between campuses. In order to follow principles of *green society* the loss of working hours needed to be avoided.

The former University Libraries had their own courses in information skills. At the new University Library, the aim was to create a frame for totally new courses, not just to copy the old ones. Teaching information skills was prioritized as one of the main tasks of the Library and new courses were offered to all faculties. At present, there are 26 courses available online for undergraduate students of different disciplines.

New courses were put into practice as web courses.. The common frame of the web courses allow a teacher to process and personalize his own course and make it more subject specific. The teacher himself manages the content of the web course in a learning platform, decides the amount of contact lessons and type of exercises. The new web courses on information skills have enabled both teachers and students working at different campuses without travelling.

The Library's Department of the Teaching and Information Services has 12 information specialists with subject specific job descriptions. This team convenes once a month. At the beginning the team got together face-to-face or through a videoconference, later the meetings are organized using an online communicator. Online video calls and instant messages have made the communication easier. Documents are saved, processed and commented in the Library's intranet.

Get-together was especially important at the beginning in order to get to know one's new fellow workers. It is still a necessary way to sustain affinity between the colleagues. Once a year we have an all-day event especially for purposes of developing the teaching of information skills. One practice adopted due this theme day was peer assessment. Doing this, the campus borders were purposely crossed again. Some smaller working groups have been set up on the basis of the common branches of science.

After five years together, there are still echoes of the old policies of the former libraries. Campus-specific thinking models are reconsidered carefully whether they are relevant or not. Some differences may be due to the nature of different disciplines, not the different campuses itself. More individual and diverse ways of working has been adopted recently.

The aim of this poster is to describe the good practices of cooperative working at the Library's Teaching and Information Services regardless of the distance, and to describe the construction of new, uniform courses in information skills for students on three different campuses.

Keywords: cooperative working, information skills teaching, distributed campus

## **CREATING OPPORTUNITIES FOR COOPERATION** - ENHANCING THE VISIBILITY OF INFORMATION SKILLS TRAINING AT METROPOLIA UAS

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#### INTRODUCTION

How to improve the visibility of library training services in a large organisation? How to make way for further cooperation with teachers? With these questions in mind, the Metropolia library began to develop a marketing strategy for information skills training: conceptualisation (branding) of training, and marketing methods and channels.

Helsinki Metropolia University of Applied Sciences, Finland's largest university of applied sciences, educates the professionals of tomorrow in the fields of culture, business, health care and social services, and technology. Metropolia has 16,500 students. The Metropolia library has eight library units and two partner libraries. Information skills training is provided by 20 information specialists at different campus libraries.

#### **BACKGROUND AND METHODS**

Different degree programmes followed their own wishes on how to organise information skills training, and the execution of training sessions and the titles under which the training was supplied varied greatly. On the whole, the selection of training services seemed disorganised and resulted in overlapping work for the information specialists. The library's information skills training team began to work on unifying the selection of training sessions.

The wide range of training was classified into three groups that can be applied to all degree programmes. The training groups were named in accordance with the information skills level of the students: "Know what to do" (for beginners), "Look for and find" (for intermediate learners) and "Dig deeper and apply" (for expert learners).

The team studied the existing cooperation models between information specialists and teachers, as well as the tried and tested teaching methods used by information specialists in their training. Based on this information, training sessions were created for each of the three groups. The library also wished to expand cooperation with teachers and provide the opportunity to organise common interactive workshops instead of lectures by the information specialists.

The communications coordinator developed a visual look for the library training services. The training services were then published on the LibGuides platform and the different levels and learning targets were visualised. The same visual look is repeated in all marketing communication, posters and roll-ups, and cards distributed to the teachers. The objective was to facilitate the marketing of library training with easily available and recognisable themes. Another goal was to inform the students of the importance of information skills and the availability of training they can request from their teachers.

#### **Results and Effects**

Has it made a difference? As a result of marketing, training sessions have been booked using the titles in the brochures, and the visualisations have prompted discussions. Cooperation between information specialists has become easier, and it has been discovered that the same presentations can be applied in different fields of study. The project and the training team also received recognition within Metropolia, as the group was presented with the *Metropolia Success* award.

With this poster, we present the strategic measures we have taken in order to promote the library training services and information literacy.

**Keywords**: library marketing, library branding, visualization, collaboration, IL training, librarian-teacher collaboration, Helsinki Metropolia University of Applied Sciences

## ACADEMIC READING FORMAT PREFERENCES AND BEHAVIORS IN MAINLAND CHINA

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We conducted a survey to investigate whether Chinese university students preferred to access academic readings in electronic or print format. A total of 1,155 undergraduate, masters, PhD, and post-doctoral Chinese students from different majors attending more than 60 universities in 102 cities completed the online Academic Reading Questionnaire from March to May 2015. Results showed that, although electronic formats are increasingly accepted by students in China, students preferred print over electronic formats for learning purposes. Thus, students preferred to follow a traditional reading habits when studying. In addition, in our paper we also discuss other research findings including the scope of our study, the current situation or reading and study by Chinese students, reading behaviors, and policies on e-reading at Chinese universities.

Keywords: reading format preferences, reading habits, mainland China

## **PROSOCIAL BEHAVIOR IN RELATION TO TIME SPENT** WATCHING TELEVISION AND READING BOOKS

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Despite extensive research on early child development, some aspects are still in need of further clarification. More research is needed, for example, on how young children's inclusion in the social world is related to their engagement with different types of media sources such as watching television and reading books with their parents. So far, research had documented media effects on prosocial behavior which is shaped, among other things, by children's prosocial skills, (Wiegman, Kuttschreuter & Baarda, 1992). Other research shows that reading fiction is associated with increased social ability in adults (Mar, Oatley, Hirsh, de la Paz & Peterson, 2006) and that reading fiction leads to better performance on tests of affective and cognitive ability? in children (Kidd & Castano, 2013). However, we feel there is a need for further research in this area.

The aim of our research was to investigate the relation of prosocial behavior and the time children spent watching television on their own or with parents and reading books with their parents. We predicted that there would be a positive relation between reading time and time spent in watching television with parent and prosocial behavior and a negative one between time spent watching television on their own and prosocial behavior.

We followed the activities of 96 typically developing Croatian children ages 17 to 39 months (51 male and 45 female)to answer the research questions. The children's parents provided information about the average time children spent watching television in general and the average time children spent watching television and reading books with parents during a typical day. Parents also completed a questionnaire regarding their children's prosocial behavior.

Our results showed a significant positive correlation between reported prosocial behavior and time children spent watching television in general ( $r=.208^*$ , p<.05) but not between prosocial behavior and time spent in joint television watching(r=.154, p>.05) or the time children spent reading books with their parents (r=.067, p>.05). This meant that the more time children spent watching television in general, the more their parents reported prosocial behavior. Since the age span of children included in the study was fairly wide, we conducted further correlations of our variables with age and found a significant positive correlation between age and prosocial behavior ( $r=.236^*$ , p<.05) as well as between age and time children spent watching television in general ( $r=.265^{**}$ , p<.01). When we applied partial correlation analyses between the time children spent watching television and prosocial behavior, the results showed that, after controlling the effect of age, the remaining correlation was not significant (r=.156, p>.05). We therefore concluded that there were no significant correlations found between prosocial behavior and time children spent watching television on their own or with their parents or reading books with their parents.

Our results were just a starting point in a larger investigation of children's habits of engagement with different types of digital devices, and for different purposes, as well as their reading habits and the effect of these habits on their social skills, including prosocial behavior.

Keywords: prosocial behavior, television, reading

## Use of Online Resources by Surveying Information Seeking Behavior of Medical Faculty Members

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Online databases and journals have altered use patterns of academic medical sciences libraries over the past decades as more users' access online resources remotely and fewer patrons enter the physical library. According to these facts this contribution assesses use of online resources by surveying information seeking behavior of medical faculty members of Iran University of Medical Sciences. A survey was designed by author-structure electronic questionnaire and distributed via email to all medical faculty members at school of medicine in Iran University of Medical Sciences.

From all the faculty members who response to electronic questionnaire twenty-six percent of said that MEDLINE was the primary database utilized, other databases in digital library of the university showed much lower usage. From the e-journals only Science direct use more than the others and from the citation databases more than the faculty members use Google scholar and they know a little about Scopus. Low use of online databases other than MEDLINE, of online e-journals other than Science Direct and of citation databases other than Google Scholar demonstrates a need for meaningful promotion of online resources and information literacy instruction for faculty. Library resources are plentiful and perhaps somewhat overwhelming. Librarians need to help faculty members discover and utilize the resources and tools that libraries have to offer. The results of this paper come at a great financial cost in practice.

Keywords: Utilization, Online resources, Information seeking behavior, Faculty Members, Medicine, Iran

## INFORMATION LITERACY IN THE FIRST AND SECOND SEMESTER OF THE UNIVERSITY

#### László Nemes

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One of the most important cultural reproduction systems of society is education. Education has to be in a central position for every culture since knowledge has to be passed on to new generations. We can sum up the functions of education in the following points: 1. reproduction of the culture; 2. shaping the identity of individuals; 3. reproduction, shaping, and conserving the structure of society; 4. promoting operations and growth of economy; and, 5. legitimating the current political system.

Education is a complex system that extends from the elementary school to the university. In my presentation I would like to talk about the higher education.

Nowadays it is widely known that most universities have three missions. The first two missions are education and research. The third mission is services for students, teachers, and people living in the neighborhood, as well as supporting culture management, economy and social development. In the 21th century I think the one of most important skill is the information literacy, which is necessary for effective and successful education, especially during the beginning academic years.

How does the Humanity Faculty of Eötvös Loránd University (Budapest) develop the information literacy of the new student in the first term? How can the university library help in this process? I would like to analyze the courses offered during a student's the first term and compare it with the service of the library.

In the first term every student has to obtain 30 ECTS (European Credit Transfer and Accumulation System), which include a general course (for example, library and information research techniques) and a specific foundation course.

In my presentation, I would like to find the answer the following questions: How we can assess the information literacy of the new student at the university through direct and indirect methods? How can the faculty and university library help develop a student's information literacy? Finally, what is the place of the university library is in the education system?

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**Keywords**: *university*, *humanity faculty*, *library*, *information literacy* 

# **EFFECTIVELY, PROGRESSIVELY AND CRITICALLY WITH PHD STUDENTS**

#### Kristyna Paulova

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Information literacy education and its development has a key impact on both pre-graduate and post-graduate study programmes. The aim of this poster is to introduce the information literacy education of PhD students and young scientists at the Czech University of Life Sciences in Prague (hereinafter CULS).

The information literacy education at CULS has been widely re-designed during last academic year 2014/2015. The implemented changes have reflected the actual needs of the PhD students (more sophisticated tools in information retrieval, science publishing, teaching). Several forms of teaching formats have been proposed. Among them, the biggest and the most important was a series of lectures called "*Info-days for PhD students*". In our conference poster, we would like to share our own experience, as well as very valuable students ' feedback that we have received after this series.

Based on our experience, we consider the policy of BYOD (bring your own device) very beneficial (Keyes, 2013). Especially combined with practical demonstrations of searching scientific information or training of presentations systems. We also prepared a better interactive format of lectures based on critical thinking techniques, such as mind mapping or critical text evaluation (Wallace & Wray, 2011).

In conclusion, experiences from *Info-days for PhD students* and our other teaching events resulted in a complex plan for the next generation of the information literacy education at CULS. We created a new procedure of choosing the topics, as well as promoting and informing about our events.

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Keywords: PhD students, critical thinking, BYOD, mind mapping, critical text evaluation

## INFORMATION LITERACY CURRICULUM IN TAMPERE UNIVERSITY OF APPLIED SCIENCES

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The library of Tampere University of Applied Sciences (TAMK) offers studies in information literacy for bachelor's degree students. Information searching skills are included in all curricula. Every student group has ten information literacy lessons during their studies. The information literacy studies are divided into three consecutive modules.

#### 1) Introduction to TAMK's library services

The first module takes place at the very beginning of the studies. Students will get an overview of local library services and library's printed and electronic collection. The objective of this module is that students know how to use basic library services and recognize the main information sources.

#### 2) Basics of information searching

The second module concentrates on the basics of information searching. The module takes place during the professional studies. Students have an opportunity to try out the basic information search techniques and the use of various information sources. The objective is that students learn the idea of systematic information search process and become familiar with the main information resources of their study field.

3) Applying and deepening information searching skills

The third module deepens students' existing skills. This module is integrated into the theses writing process. Students learn how to plan their searches and how to search more efficiently and systematically. The focus is on the main information sources of their study fields. The aim is to ensure that students know what resources to use in the future, both in learning assignments and in working life situations. Learning how to critically evaluate search results and sources belongs to the module as well. These information literacy studies in TAMK follow the recommendation of information literacy for the Finnish Universities (Suositus Suomen korkeakouluille, 2013). In addition to information literacy studies, the library also provides support in the form of information search guidance. The guidance is also provided as a three level model, deepening from quick help to in-depth assistance.

1) Consultation with the information specialist at the library service desk

The easiest and fastest way to have guidance in information searching is to walk to the service desk and ask for help from the information specialist.

#### 2) Information search workshops

If the help at the service desk is not enough, students are encouraged to attend to an information search workshop. In the workshops a small number of students are given guidance in their specific search problems. Usually the problems deal with finding background information, especially e-resources, for assignments and for thesis.

3) Personal guidance by a field-specific information specialist

If the student has already participated in an information search workshop and still feels that more guidance is needed, our fieldspecific information specialists can offer personal guidance in locating information in their fields of expertise. The comprehensive information search guidance aims to support students in their growth to future professionals.

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Keywords: information searching, information literacy, teaching, academic libraries

## LEARNING IN A GREEN LIVING ROOM

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#### **INFOPOINT GUIDANCE**

A few years ago the library of Satakunta University of Applied Sciences (SAMK) launched an INFOpoint for students who needed information for their theses. INFOpoint offers personal assistance for students through appointments. Information literacy was taught in computer classes, where the students learnt to use the databases and familiarised themselves with information retrieval. We received positive feedback on INFOpoint guidance, and it encouraged us to introduce the same method to adult and first year students.

#### ACTIVATING TEACHING METHOD AND COLLABORATION

Information literacy skills have become an essential part of essays and PBL assignments. Therefore, the library renewed its approach to information literacy last autumn. We wanted to change classroom teaching and activate the students. As a result, an information specialist now guides small groups in searching information for an assignment, in narrowing the search and in considering different search terms. The students use databases and electronic and printed material as sources of information. Guidance is given in the library instead of a classroom. The information specialists in different campuses work with the teachers in planning the assignments and schedules. Sustainable development takes place in the library's everyday life, when colleagues share information, resources and material via platforms eco-efficiently.

#### **Online Tutoring**

Online tutoring is one way of reducing the ecological footprint. The library has developed an online version of guidance in information literacy for adult students. The information specialists give guidance literally in the student's living room via the HILL online platform. The platform is developed by SAMK, IBM and Cisco. It is a concept which combines pedagogy and technology. Guidance is given with the help of technology – not conditioned by it – irrespective of time and place using the student's technical equipment. The guidance sessions are related to adult students' thesis writing and the meetings are booked individually.

#### **Remodeling Library Premises**

The library premises at SAMK have been remodeled in accordance with this activating teaching method and the theme of sustainable development. The students' living rooms have been refashioned into relaxing, cozy and eco-friendly areas. These green living rooms have been organized in cooperation with the RDI unit of SAMK.

The living rooms in the campuses of SAMK have received the students' unreserved approval and their rate of use is high. The facilities have been furnished with sofas, beanbags, armchairs and tables for negotiations and group work. Borrowable laptops have been a great hit product in the libraries. Students can borrow laptops for four hours and use them inside the university premises.

#### **FUTURE GENERATIONS**

In conclusion, the library personnel try to meet the customers' present and future needs by developing services and making decisions which take the future generations into consideration.

**Keywords**: information literacy, coaching, activating teaching method, online tutoring, collaboration, sustainable development, library premises

## CHALLENGES TO CONDUCTING PROGRAMS FOR INFORMATION LITERACY: OBSERVATIONS FROM THE BULGARIAN PRACTICE

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The current Bulgarian development shows clearly the crucial importance of information literacy for the development of society. The importance of the problem of information literacy results from such distinct dynamic processes:

- continuous change in technology, the introduction of new techniques and approaches in all sectors of the economy, administration, education;
- transition of services and information flows in the finance and banking, markets, transport, public services, health, education and others to electronic forms of service via the Internet;
- the need to govern negative demographic and social processes;
- considerable interest to problems and practices in the field of ecology, the strong public attitudes towards natural life and energy efficiency;
- demonstrated need for the reform of the education system at all levels and of implementation of practices of lifelong education;
- the need to achieve a high level of communication technologies for the widest possible public mass;
- inclusion of minority and marginalized groups, very important for the Bulgarian society, which has more than half a million ethnic minorities.
- In terms of information literacy the Bulgarian Library and Information Association adheres to the following understandings of the role of information literacy:
- as a tool of socialization of the individual and also an important factor that provides educational and occupational mobility of individuals;
- as a way of attracting groups to professional / social life
- as a instrument for the inclusion of the disadvantaged people and people with limited possibilities to the social / professional life
- as a tool against the marginalization of certain social circles -lonely and elderly rural residents and unemployed people. The aim is to create a typology of the situation in Bulgaria and to individuate different consumer groups.

The report presents a SWOT analysis of the state of information literacy in Bulgaria and outlines the main directions for the successful implementation of information literacy programs to the specific conditions of the Bulgarian society. Core publications on the subject were analyzed dnd educational programs of universities and libraries examined. The analysis will help to build effective programs for education (for Information literacy), differentiated by various age, social and professional groups. Information literacy is a part of a large complex of a culture of long-life learning and culture of reading as part of political literacy and as a basis of the political culture.

Keywords: information literacy, libraries, education, different groups, programs

## WIKI OF ACADEMIC LIBRARIES INFORMATION LITERACY PROJECTS IN ITALY

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During 2014 a working Group on Information Literacy was established at Sapienza University of Rome, one of the major European Universities. The main aim of the Group was to develop a teaching plan for Information Literacy, for both face-to-face and distance learning.

In order to obtain the expected result, the working Group has taken advantage of the activities which other academic libraries have already carried out in Italy. So it has developed a wik<del>i</del> (http://infoliteracysapienza.pbworks.com) to divulge the results of the research.

The wiki includes an index of all the Italian Regions and their related Universities, making a total of 85 (excluding online Universities). For each of them, the Group has collected the educational activities offered to users, gaining the data from library system websites or from the individual libraries. Thus, we have discovered that the offer ranges from well-structured Information Literacy courses to tutorials, to simple reference services. We aim to systematically gather and update the data, but to do so we require the support of our colleagues from all universities and we also believe it will be necessary to perform an exhaustive review on at least an annual basis. As in the nature of the wiki, the update will be performed by the users and will therefore be collaborative. We are in the process of creating a thesaurus so to make it more user-friendly. By clicking on each looked-up term, a list of all Universities which provide that specific service will appear. For instance, the entry "CFU" (in Italian, *Crediti Formativi Universitari* - ECTS European credit transfer system) directs you to the Universities which officially recognise training activities within libraries. Again, the term "courses" leads to a whole list of libraries which offer structured training activities, from user education to information literacy itself. Evidently, the wiki is a work-in-progress and still requires the contribution of all the colleagues involved thanks to their work. We do hope it will be a useful reference tool to all those who are interested in Information Literacy in our country, at any level and in any context.

For our wiki we have used a non-commercial version of software, freely accessible.

Keywords: information literacy, academic libraries, Italy, wiki, Sapienza University of Rome, collaborative tools, sharing experiences

## WORKSHOPS

# **TEACH SMARTER: USING APPS AND TOOLS IN YOUR INFORMATION LITERACY INSTRUCTION**

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New educational technologies are providing librarians with the opportunity to increase student engagement and learning. These new tools can be integrated into a library's information literacy programming. This can be a fun and rewarding process since several new tools have been developed to be more intuitive to use, and thus more user friendly. The objective of this introductory hands-on workshop will be to provide participants the opportunity to learn new apps and technologies in the classroom. These tools can increase student collaboration and interactivity, and this can be directly applied to improving lesson plans and assessments. The target audience would be library professionals teaching information literacy one-shot or embedded classes who have little or limited experience using apps and new technologies in the classroom.

Free online apps and technologies will be showcased during this session, with the following topics covered: online discussion boards with real-time display; on the fly video quiz creation; and concept and word mapping tools. Technologies will be showcased and participants will be engaged in demonstrations and discussions. Participants have an opportunity for hands-on practice and exploration, and will share their experiences and prototypes with other participants in the workshop. By the end of the workshop, participants will have demonstrated familiarity with at least one new technology.

Participants should bring a laptop, tablet or smartphone to use during the workshop. Internet access is required.

Keywords: information literacy, media literacy, teaching with technology
# **Developing Online Learning Modules for Data Management**

# Brigitte Doß

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# TOPICS TO BE COVERED

In this workshop, participants will actively discuss how to mediate skills about research data management (rdm) and curation as one important aspect of data literacy. In order to do so, we will analyze how rdm skills could be covered by online learning modules.

Primarily, we will look at the state of the art. Which open online learning programs coping with dm already exist? What do they cover? In this point, experiences and knowledge with existing online learning modules will be collected.

In the next step we will analyze the compounds of four specific modules in details in small working groups. Finally we will actively discuss our results in plenum. Which compounds need an online learning module for rdm and how should this module be constructed and embedded?

# **OBJECTIVES**

In the end participants should have a clear overview about existing open online learning modules for rdm a critical eye on their shape and content and use them as a basis for building up such a course in their respective institutions in order to strengthen students' and researchers' data literacy

### OUTCOMES

common online learning modules for rdm, their content, their specific points

critical assessment of online learning modules e.g. considering the relation marketing to content

discussion on online learning modules in general and specifically in the field of data literacy

### TARGET AUDIENCE

Everyone is welcome; the workshop is especially interesting for participants who plan to build up a research data infrastructure for their institution.

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University of Edinburgh (2014). Research Data MANTRA - DIY training kit for librarians. Retrieved March 06, 2015 from http://datalib.edina.ac.uk/mantra/libtraining.html

Keywords: data management and libraries, data literacy, e-learning, research data, data curation, long-term preservation

# **ENVIRONMENTAL LITERACY: HAZARDOUS SUBSTANCES IN CONSUMER PRODUCTS**

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Environmental literacy is the capacity to perceive and interpret the relative health of environmental systems and to take appropriate action to maintain, restore or improve the health of those systems. An appreciation of the health of the planet leads to changed personal lifestyle behaviours.

During my workshop I will provide content on the following topics: (1) hazardous substances as ingredients in household chemicals, cosmetics, baby care products, toys, car care products, indoor paints, and varnishes; 92) sources of information for hazardous substances; (3) how hazardous substances enter our body and their effects; (4) effects of hazardous chemicals on other organisms in our environment; (5) contradictions between hazardous chemical production and use and sustainable development; and,(6) steps to avoid hazardous substances or minimize their effect.

The objectives of the workshop are to demonstrate the relevance of environmental literacy and to examine basic principles of sustainable development connected to everyday life.

Workshop participants will first be able to check their own knowledge of environmental labels, eco-labels, awareness of hazardous chemicals in consumer products, and effects of hazardous chemicals. I will follow this section with an overview of hazardous substances in common products. Participants will also examine the ingredient lists of consumer products and the ways to collect reliable information about ingredients via the Internet and instructional materials developed by our research group in the framework of the EU Life + project "Baltic Info Campaign on Hazardous Substances (BaltInfoHaz)". I will distribute information fact sheets. The workshop concludes with participants discussing how they can avoid hazardous substances or minimize their effect on their lives and the relevance this topic has for principles of sustainable development. The intended workshop outcomes are improved knowledge of hazardous substances in consumer products and better environmental literacy skills.

My target audience is people who use household chemicals, cosmetics, baby care products, toys, car care products, and indoor paints and varnishes who are concerned about their and our environment health.

e European Union Life+ Project "Hazardous ardous Substances (BaltInfoHaz)".

Keywords: environmental literacy, consumer products, hazardous chemicals, healthy lifestyle, sustainable choices

# **CROSSING THE THRESHOLD WITH THRESHOLD CONCEPTS: Redesigning a Library Instruction Lesson Plan**

### Samantha Godbey, Xan Goodman and Susan Wainscott

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Core concepts that can provide barriers to new understanding exist in all disciplines. The recently adopted Framework for Information Literacy for Higher Education from the Association of College and Research Libraries (ACRL) utilizes these threshold concepts to reframe how librarians approach information literacy instruction. In fall 2013, a team of librarians at a large public research institution in the United States sought to re-conceptualize library instruction for students having their first exposure to college-level research in a large first-year science course. Inspired by readings on threshold concepts, the librarians took the existing lesson plans and re-approached the course through that lens, in order to identify transformative concepts that could help students gain access to essential information literacy concepts and the work of their discipline. In this workshop, those three librarians will share their process of planning and implementing lessons on threshold concepts in this course and others, and will also help participants to gain a fundamental understanding of threshold concepts and learn skills and approaches to undertake a similar reconfiguration of their own instruction. The target audience includes any academic librarian involved in instruction, especially those who offer one-shot instruction sessions or those who teach for-credit courses. During the workshop, participants will actively engage in the work of reconceptualizing library instruction through the lens of threshold concepts by participating in assignment and lesson plan analysis, discussions, and hands-on activities. Emphasis will be placed on redesigning a one-shot library instruction session. Participants are encouraged to bring a lesson plan, course assignment, or syllabus to serve as a starting point for the workshop's activities. Participants will be led through the process of collaboratively examining stated learning outcomes, identifying the threshold concept or concepts at the core of the lesson, and using backwards planning to redesign the lesson in order to help students acquire beginning proficiency with the threshold concept and allow for scaffolding of instruction. The lesson redesign will incorporate active learning activities and formative assessment strategies. Participants will be given time to work on their own lesson plan and to exchange successful teaching and assessment strategies with fellow attendees. By the end of the workshop, participants will identify essential learning outcomes for their own instruction, map learning outcomes to threshold concepts, design or redesign a lesson plan through the lens of threshold concepts, and identify other threshold concepts for future exploration.

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Keywords: information literacy, threshold concepts, instruction

# WORKSHOP ON "EXE LEARNING" SOFTWARE FOR Information Literacy e-Learning Modules

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# INTRODUCTION

Libraries are used to arranging training programs for library instruction, information literacy, e-resource management, reference management, and avoiding plagiarism. In a broader sense, these topics are part of information literacy exercise and librarians prepare specific modules for the library users' training purposes. In addition to participating in the training programs, the users need to practice their learning in a self-learning mode. Furthermore, while there are also users who do not have the chance or choose not to attend library-arranged programs face-to-face, these users can practice the same materials through self-learning and update their knowledge by completing exercises and taking quizzes to monitor their own progress.

Researchers and faculty members can design and develop their teaching materials and keep them in any open educational platform or put them on their personal or organizational website. The library professionals who are accountable for creating and maintaining e-learning materials for their users can create content through this software, too. Generally, to create online content there is a need for IT professionals, but the majorities of the libraries have a scarcity of dedicated IT professional. This is the visible gap and "eXe (eLearning XHTML editor) learning" (http://exelearning.net/?lang=en) software is there to reduce the gap.

eXe Learning (version 2.0.1) is an open source software that can be used to create an online learning environment, for example, creating interactive and attractive modules on information literacy without the need to become proficient in HTML/XML or complicated web-publishing applications. Experts say, knowing Microsoft Word and Internet browsing are enough to operate this software and create attractive and functional online learning materials.

# **TOPIC COVER**

In this session, participants will design, develop, and publish interactive web-based learning modules on information literacy, e-resource discovery, reference management, evading plagiarism, and predatory (fake) journals.

# **OBJECTIVES**

Our objectives are:(1) To strengthen e-learning expertise among the participants.

- (2) To create awareness about e-learning management.
- (3) To encourage open education through the e-learning platform.

### ANTICIPATED OUTCOMES

Participants will be able to:

- (1) develop an e-learning structure that suits their needs,
- (2)) build online resources that are flexible and easy to update,
- (3) work as a trainer to develop e-learning resources in their respective organization.

### TARGET PARTICIPANT

Our whole-day presentation is designed for twenty researchers, faculty members, library/information professionals, and master's students in information science/library management. We will provide Presentations, exercises, and guidelines to the participants in PDF format. The software is freely available for download. Please bring your own laptop.

Keywords: information literacy, e-learning platform, eXe learning software, open education

# THE MODEL OF CONSISTENT TEACHING OF Information Literacy in Online Courses

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The aim of this workshop is to demonstrate the model of an online student-centred information literacy credit course, developed at the University of Tartu Library, and to give the participants knowledge and practical skills in developing and teaching an active learning online course in information literacy.

# BACKGROUND

This is the model of a stand-alone information literacy e-course applying learner-centred active learning through active construction of knowledge and developing critical thinking through reflection. The course is related to the particular learners' information needs and is suitable for all specialties as each student is supervised by a subject librarian well versed in the information sources in the student's speciality. Course assignments and feedback from tutors and fellow students are posted to discussion forums where all participants can learn from each other and from their tutors. This model was successful in promoting information literacy at the university and promoting the library as a competence centre for information literacy. Information literacy courses are integrated into curricula as free elective or elective courses. The model has also been deemed useful for fostering information literacy as an essential transferable lifelong learning skill outside academia. Nationwide e-courses are organized for high school students and teachers, and for librarians. A set of open access materials were developed for the courses which can, in answer to concrete cases, be adopted for teaching a wide range of learners starting from high school students to librarians.

The results of the analyses of feedback from participants show that such a course model of tutor-guided online learning is well suitable and effective for teaching information literacy (Seiler, Miil, & Lepik, 2012).

# Topics

Introduction to online course design based on the given model, including learning outcomes, teaching and learning activities and assessment methods

New module in the information literacy course for doctoral students: research data management

The course model from the tutors' perspective: how to become and to be a tutor in an online information literacy course

### ACTIVITIES

The workshop is a mix of presentations, group discussions and hands-on activities. Participants examine the course syllabus and assignments, discuss activating strategies in an online course and examine how teaching and learning activities and assessment methods contribute to the achievement of learning outcomes.

### TARGET AUDIENCE

Librarians who teach online courses or who are interested in teaching online. Participants are encouraged to bring a laptop.

### OUTCOMES

By the end of the workshop, participants will be able to implement online information literacy instruction at their institution using active learning methods to make student learning more effective.

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Keywords: information literacy, online course, e-learning, active learning

# Demet Soylu

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Satisfying the information needs of the farmers and enabling the farmers to have the required information literacy skills is of great significance and utmost preference in the green society where the public have raised awareness about farming and organic food. Farmers are among the key vocational groups contributing to the agricultural development of the countries. Their efforts raise the quality in animal feeding and fertile products. Maintenance of high quality in agricultural activities depends on the farmers' information level and information literacy skills. When their information needs are satisfied and their information literacy skills are supported, they will know how to deal with agricultural issues. In this workshop, our aim is to put forward the information needs of farmers in Turkey and Sweden, basing upon the findings to be acquired from the farmers in both countries with the given questionnaires. Within the frame of the workshop, we will put forward our recommendations about how to improve the information literacy skills of the farmers. Our unique aim is to develop a general suggestions framework with the contributions of the workshop participants, and put forward our suggestions about what municipalities should or can do with the purpose of enabling farmers to develop their information literacy skills. Our workshop will be in a reflective atmosphere based upon mutually shared ideas. This workshop is promising in that it may be transformed into an EU project aiming to better information services for farmers, and enabling the development of farmers' information literacy skills.

# Аім

We aim to provide public librarians and academics with the findings that we collected with the questionnaires applied in Turkey and Sweden. We will inform them about the current needs and information seeking behavior of farmers in the agricultural fields. Following this phase, we will enable them to develop lifelong learning projects, courses and seminars that will include farmers in the lifelong learning process and that will help them gain and develop information literacy skills.

# Метнор

The workshop will be carried out with non-formal educational methods. It will be a participant-focused applied workshop which requires intensive interest and mental and physical participation of the participants. They will put forward their valuable contributions. They will work in groups and each group will develop a key tool. This tool will be related with gaining one skill; more than one skill and tool developed throughout the workshop may be used in public libraries following the workshop. The workshop will be future oriented. As the instructors of the workshop, we aim to disseminate the workshop outputs and enable them to be sustainable.

# TARGET GROUP

Our target groups are academicians and public librarians, people who work in the Green ICT field who will have the key role in guiding farmers.

### **Required Materials**

Circle type sitting system, boardmarks, board, laptop and poster papers

Keywords: information literacy, green society, farmers

# **PROACTIVE AND PASSIVE SCEPTICISM; A METHODOLOGY FOR EXTENDING DIGITAL LITERACY TO SURVIVE MISINFORMATION AND SUPPORT EMPOWERED CITIZENSHIP?**

# Geoff Walton and Ali Pickard

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This workshop will focus on a British Academy/Leverhulme funded project. The project's primary aim is to empower school children to make informed judgments about online information resources they have found – a critical capability within the overall concept of information literacy. The objective is to encourage proactive scepticism that allows for rational judgments of the trustworthiness of online information. A toolkit will be constructed and tested in-situ using Participative Research and Action (PRA) with an initial case study of 16-18 year old students in a UK secondary school. PRA emphasises that participants' perceptions and interpretations of their own information needs are central to the research process where the researcher acts as facilitator.

This project will address a number of national agendas in relation to the digital literacy of the UK population such as; UK Digital Skills Task Force; Digital Skills Young People's Task Force; Go ON UK and the BCS Digital Literacy for Life programme. The rapid introduction of online government services has increased the significance and urgency of digital inclusion and digital literacy in order to support the democratic process and ensure active citizenship within all sectors of the population.

Recent research with young people demonstrates that their ability to function in digital environments on a psychomotor level may well be impressive but also notes that cognitive and affective responses need to be supported by mechanisms that increase their self-efficacy and understanding (Kurbanoglu, et al 2006). This project will build a new research framework for digital literacy and informed digital citizenship drawing on previous research on trust (Pickard et al, 2010) and digital discernment (Walton & Hepworth, 2013). This work is also informed by cognitive psychology (Lewandowsky, et al., 2012) which puts forward that people, by default, accept information as true and must make a special effort to be sceptical about it.

The purpose of this specific workshop is to explore and debate the notion of digital discernment and introduce to delegates the new concepts of proactive and passive scepticism and explore the theoretical derivation of these notions and demonstrate how these will be used in this participatory research and action framework.

Passive scepticism (default position) is defined as a person's ability to make limited judgements about information which are, in themselves, heavily influenced by preconceptions (worldview).

Proactive scepticism (special effort) is defined as a person's ability to make balanced judgements at all times about information independently and regardless of worldview.

The PRA methodology will be introduced and a full explanation of how it will be used to explore 16-18 year-old's digital discernment will be given.

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Keywords: information discernment, digital literacy, secondary schools, participatory research

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# **Objectives and Target Audience**

The objectives of the workshop are to develop participants' understanding of the Information Literacy (IL) of MOOC learners, and to help participants form strategies to support MOOC learners' IL. This workshop is intended for people who are already supporting or teaching in MOOCs, or who plan to support or teach in MOOCs.

# Structure

The session will start with a presentation (see next section) which identifies factors affecting MOOC design, describes the ways in which MOOCs may be categorised, and outlines aspects of IL experienced by MOOC learners. Following the introduction, participants will identify the learning and teaching design and characteristics of a specific MOOC, identify the IL needs of the learners, and propose a strategy for meeting those IL needs. Those who are already supporting or educating in MOOCs will be asked to work on a MOOC they are already (or are planning to be) involved with. Those who are not yet engaged in supporting or educating MOOCs will be given a specific MOOC to work on. The first author draws on her experience as a MOOC educator and a member of the FutureLearn Academic Network (FutureLearn is the UK's MOOC consortium). The second author brings his extensive experience as an educational developer and learning designer.

# EQUIPMENT

It will be useful if the participants had access to networked computers, to examine MOOC characteristics during the activity part of the session.

# Topics to be Covered in the Workshop Introduction

We will introduce Entwistle et al's (2004) model of the Teaching-Learning environment. This presents factors which contribute to the quality of student learning, taking into account learner characteristics, teacher characteristics, and the environment (e.g. institution, influence of external bodies, infrastructure): the presenter has amended this model to include the impact of the MOOC platform/provider. We will also introduce Conole's (2014) 12 dimensions of MOOCs, and Sharpe et al's (2006) dimensions of blended learning as tools to reflect on the nature of a specific MOOC. Finally, the first author will draw on her research into information behavior in a MOOC to present the aspects of IL that a MOOC learner might be engaged with.

# OUTCOMES

Understanding of frameworks that can be used to categorise and audit the learning design of MOOCs; Increased knowledge about IL for MOOC learners; Practical insights (from the activity) that can be applied in supporting the IL of MOOC learners.

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Keywords: information literacy, MOOCs, e-learning, pedagogy, learning Ddesign

# GO GREEN AND KEEP THE EARTH CLEAN

### **Daniel Weiss**

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The Green Library Movement gained popularity in the beginning of the 21st century. The Talloires Declaration, the first official statement for a commitment to environmental sustainability in higher education, forced academic libraries, along with other units within higher education institutions, to start going green in the early 1990s (Smith 2011). As evidenced by the many publications on the subject, all kinds of libraries are participating in this movement and green libraries are now pervasive. The main concern of the Green Library Movement is greening libraries and reducing their environmental impact. Libraries today are finding ways to incorporate green thinking into action by working on reducing the waste – ecological/carbon footprints – resulting from library operations and adding more environmentally responsible practices in their daily operations and services. They are taking a more proactive role in green practices by helping communities they serve to become green and sustainable. They lead, set example to, and act as role models for sustainability (Jankowska 2011; Kurbanoglu & Boustany 2014).

The green library is a multi-faceted concept that has several components such as green buildings, green operations and practices, green programs and services, green information systems, and green collections. Our workshop will focus mainly on green programs and services libraries offer. We will start with a general overview of the green library concept and its components. We will address creative and unusual green programs that libraries have recently started to offer such as creating community gardens, maintaining tool landing, archiving and lending seeds, and lending watt meters (Antonelli 2008; Mulford & Himmel 2010; PennState 2014). We will focus on how to involve citizens in sustainable activities. Participants will design and prototype green services by working with enhanced methodologies – such as Lego<sup>®</sup> Serious Play<sup>®</sup>, Visual thinking, Business Model You<sup>®</sup> & Gamification.

Our main objectives for this two hour workshop is to increase awareness of librarians regarding green library programs and help participants to design easy to implement services and or programs. The target audience is anyone interested in green libraries and green library programs.

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Keywords: green libraries, green library movement, environmental sustainability

# PANELS

# **Developing Information Literacy Policy and Activity in Scotland**

# John Crawford

The Right Information: Information literacy skills for a 21st century Scotland, Glasgow, Scotland, scotinfolit@googlemail.com Bill Johnston University of Strathclyde, Glasgow, Scotland, b.johnston@strath.ac.uk Lauren Smith University of Strathclyde, Glasgow, Scotland, lauren.n.smith@strath.ac.uk

The objective is to offer three presentations describing current and planned work on IL in Scotland. This will be followed by a discussion.

# INTRODUCTION AND OVERVIEW: JOHN CRAWFORD

The Right Information: Information Skills for a 21<sup>st</sup> century Scotland is an online community of practice which works with the Scottish Library and Information Council (SLIC) and increasingly with other bodies to promote the development of IL in Scotland. Following a successful programme of advocacy in 2014 a cross sectoral Scotland-wide conference was held in February 2015 which attracted people from a diverse range of professions who recognise the value of IL in their own sphere. An analysis of the conference identified a number of ways forward including the preparation of a policy statement on IL aimed at decision makers at the government level, and a mapping exercise to identify overlapping areas of interest across various professions with an interest in IL, as well as to a develop a strategic plan for IL partnerships. The presentation will report on the progress of these initiatives and how government is being influenced.

# INFORMATION LITERACY AND THE OLDER PEOPLE'S MOVEMENT: BILL JOHNSTON

Scotland, like many nations, is an ageing society, with the numbers of people over 50 set to grow significantly in the coming decades. This demographic raises a number of social/ political issues: future demand for and organisation of health and social care services; lifelong learning provision; sustainability of pension provisions; community engagement and contribution of older people. These issues are of clear concern to Governments and service providers. They are equally significant for older people, their families and society in general. A key unifying matter is the question of how data and information relevant to ageing is to be organised and made available to all interested parties. Of these parties it is older people themselves who are likely to be at a disadvantage, so the question of understanding and developing their information literacy is critical. Bill Johnston will outline the landscape and offer a possible model for the future based on his involvement as Chair of the Scottish Seniors Alliance and involvement with the Scottish Older People's Assembly.

# Learning, Lending, Liberty? Can School Libraries be Engines for Youth Citizenship?: Lauren Smith

"Learning, Lending, Liberty? Can school libraries be engines for youth citizenship?" is a research and advocacy project which will be funded by a CILIP Information Literacy Group Research Bursary. It will run from May to October 2015 and will be undertaken by Lauren Smith, a researcher at the University of Strathclyde, on behalf of the Right Information, Scotland's Community of Practice for Information Literacy. Through surveys, interviews and case studies, the research will explore how libraries can support young people's political participation both in and outside of school, what information was provided to school pupils in the run up to the 2015 UK General Election and 2014 Scottish Independence Referendum, how school libraries supported this provision, and what sources of information outside of school young people use (including mainstream and social media). Lauren will report on the outcomes of the research project, which will include recommendations for best practice for the LIS profession relating to political participation and IL provision.

Keywords: advocacy, citizenship, information literacy, policy, political information, Scotland, older people, young people

# FROM EPHEMERAL INFORMATION TO Sustainable Knowledge Management

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The concept of sustainable information can be understood in various ways. Sustainability may refer to the life cycle of materials, fluids and structures of the libraries' buildings – water and energy efficiency, materials use and indoor environmental quality-, to the energy savings regarding infrastructures and use of technologies, or to an idea of a dynamic management of information which takes into account the question of stability. In this workshop, which is open to other researchers, we will focus our attention on works and readings from information science and from management science. In that perspective, information sustainability means a reflection on the preservation of strategic information collections over time, trying to overcome the main logics of stocks and flows management and to build a strong culture.

Vincent Liquète will present an overview of what sustainable information means through eight management principles designed to ensure the sustainability of information within organizations. Dominique Maurel will demonstrate that information professionals have to adhere to and design a sustainable information management program to better support effectiveness, efficiency and performance goals of organizations, as well as to ensure their accountability and transparency (Davenport, 1997). An exploratory and descriptive survey (Pickard, 2013) conducted in 2013 among French-speaking information professionals in Canada and France clearly demonstrates that these efforts must necessarily be part of a strong culture of sustainability of information (Brunet, 2013; Choo, 2013) that mainly involves : the structure and management of an efficient information system; the organization, transfer and reuse of information best practices; a permanent and constant action of training and user support; and a long-term commitment of all parties involved. Anne Lehmans will suggest, form a research project, some organizational principles which tend to facilitate the knowledge building process in that culture of sustainability along communities of practice: reliance, transaction, cognitive accessibility to information. In line with proposals for redesigned information literacy frameworks such as Metaliteracy or Transliteracy, Karine Aillerie will focus on the necessity to better understand user's information practices and especially teenagers or students habits in order to adapt training sessions and establish their relevance. The fact is that trainers and teachers have to deal with these personal processes at the same time as training should be based on durable skills.

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**Keywords**: knowledge management, Sustainable information management, green information, information ecosystem, cognitive accessibility

# An Ecological Approach of Collaborative Knowledge Management into Small Professional Communities: Sustainable Information Practices for Sustainable Work

### Anne Lehmans

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This research project on knowledge management in 10 small companies specializing in green architecture focuses on the construction of shared knowledge in a specific community of practice. We inquired, interviewed and observed the information systems of 30 professionals, architects, retailers and builders using a phenomenographic theoretical frame. We characterize their information practices regarding their aim to "think locally and act globally" (Ellul, 2006). Organizational information processes are related to information literacy (Bruce, 1999) in order to integrate a sustainable information management into communities of practice.

The research team has identified information and communication practices as well as a need of education, management methods and innovative knowledge strategies in the community. Three dimensions have been taken into consideration:

- cognitive: information governance
- technological: learning objects and mediation
- socio-political: information architecture.

We use socio-constructivist, semio-pragmatic and discourse analysis methods to link:

the actor in the workplace, his representation system and his personal information literacy within the work activity (Engeström, 2001; Lloyd, 2010),

interactions between communities and within each community,

the overall information ecosystem (Liquète, 2013) which includes services, structures, people and resources.

We suggest some organizational principles for a sustainable knowledge construction process:

reliance: it implies informational confidence, based on quality criteria (relevance, reliability, credibility, authenticity, richness, accessibility) and symbolic value.

transaction: relationship between the individual and the environment as the main condition to the sustainability of information system is possible only in a context of social communication, which is opposed to the traditional top/down expertise approach.

cognitive accessibility to information.

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Keywords: knowledge management, sustainable information, information ecosystem, cognitive accessibility

# Some Principles of the Durability of the Informative Professional Practice

### Vincent Liquète

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The concept "of sustainable information" is subject to numerous definitions going back to specific conceptions of sustainability: duration of buildings and structures, reduction of the energy consumption in the documentary spaces, stabilization of the dynamic modalities of the information management.

The objective of our search is to locate and to identify the principles which define that would be a sustainable information for a professional.

Methodically, we worked on the observation of professional situations and from semi-directive conversations of explicitation with diverse populations: eco-builders, architects, information officers and science students of the information-documentation.

The observations and the analyses of the interviews, we shall present eight managerial principles to insure the sustainability of information within organizations.

**Principle 1:** sustainability and responsibility: the concept of sustainability aims at a principle of responsibility trying to operate and to articulate three objectives that we shall present.

**Principle 2:** sustainability and rationalities: the rationality of the actor concerns the strategic dimension, in particular in the choice of places, and the tactical dimension, which concerns the choice of people.

**Principle 3:** sustainability and performance: another dimension of the durability concerns the search for the best performance of the group or the company. The concept of sustainability is essentially based on three types of performances that we shall explain.

**Principle 4:** sustainability and collaboration: information research and expertise for the professional cannot be considered without the collaboration of the actors, within the observed entity, and between the structures.

**Principle 5:** sustainability and viability of the information system: sustainability of the information practices is also related to stability and balance of the information system.

**Principle 6:** sustainability and stability: the sustainability applied to the technologies of information and communication includes the idea of stability of technical solutions which allows solving a set of necessary tasks without trying to aim at extreme novelty towards the technological markets.

**Principle 7:** sustainability and longevity: the practices of information which can be registered around a principle of sustainability, are submitted, de facto, to a methodical recording of the initiatives and processes, as well as on the regular analysis of the selected information within the realization of the activities during a project, later to be recorded and kept.

**Principle 8:** evaluation of the sustainability: the objective of sustainability of the information practices in a human collective has more chances to be realized if the project follows a participative approach. People develop the capacities, the skills and the self-confidence they need within the framework of their activities.

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**Keywords**: sustainability, practice of information, professional community, eco-constructive architecture, support of the knowledge, research

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