

Mobile Information Literacy: More Skills for Users of Information?

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Abstract. The growing trend of using mobile devices to access and deliver information are forcing us to adapt information services and digital content for mobile devices. Users who connect to the internet and services via mobile devices look forward to possibilities of seeking, processing, saving, sharing and delivering information through a variety of smart devices and to have access to information anywhere and anytime. Mobile information literacy is presented as a theoretical concept based on well known concepts of computer, information and digital literacies, especially on the newest definition of information literacy provided by CILIP (2018) which is compared to best practices and TASCHA (2015) curriculum of Mobile Information Literacy. Skills and abilities to discover, seek, process, and use information ethically may be different in mobile environment due to differences how people handle mobile devices, attributes of devices, and basics of our information behaviour on the move than in interaction with computer.

Keywords: Information Literacy, Mobile Devices, Information and Communication Technologies, Libraries, Information Competencies, Information seeking, Mobile Information Literacy

1. Introduction

We live in the age of the information society which offers many opportunities but could also be challenging especially for certain groups of users of information. On a daily basis we need information in personal and professional life. We seek, select, use and deliver information from different sources and use a variety of devices. We could seek information actively or receive them passively. The amount of information that surrounds and influences us is still growing. We need the skills and abilities (competencies) which help us work with information effectively and ethically. These competencies, provided by digital or information literacy, help us to avoid information overload or to choose irrelevant or wrong information.

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Information literacy, especially the ability to select and evaluate information, is especially important in face of the growing trend of mobile information and communication technologies usage, so-called Mobile revolution (Steinbock, 2007). We should be prepared for users that receive and deliver a huge amount of information by mobile technologies. The number of unique mobile users has been more than 5 billion people worldwide in January 2019 and it still grows (Kemp, 2019). Mobile internet has been accessed by more than 4.4 billion users in January 2019 (Clement, 2019). Those people are active and possible users of whole spectrum of information services provided by libraries, government, entertainment and more. Also, right now they are users of a variety of information which they need to seek, evaluate, use and ethically share with others.

Through mobile devices (smartphones, tablets etc.) we can access information almost anywhere and at any time. New wireless network allows us to connect to the internet and communicate information from distant places and on the move. These possibilities can save our time, improve workflow, as well as speed up getting information we need to accomplish variety of tasks. However, accessing this information can also pose challenges. Does ubiquitous access to information require any new competencies?

2. Literacy in the digital age

Recent rapid development of communication, media and information technologies is shifting the society to a new concept of the information society. We need information to accomplish almost every personal or work related task. And we are also surrounded by information in many ways – advertisement, media, literature, communication, applications and of course our senses. We developed various ways to access and deliver information and we are still working on the new technologies and devices to share, process, save and use information in certain forms. To accomplish such tasks we need adequate skills and abilities demanded by the changes in society, by the increased amount of information. Skills are also needed to seek, access, process, evaluate and share information effectively and ethically. We should be information (or digital) literate people.

Since Paul Gilster (1997) published book *Digital literacy* – the number and role of new information channels in society has changed rapidly. However, his general idea or explanation of digital literacy is still current and valid – an ability to understand and to use information from a variety of digital sources using the technologies and formats of the time (Bawden, 2008). It is difficult to find a complete definition of digital literacy, as Lankshear and Knobel (2008) stated: “However, it reminds us that any attempt to constitute an umbrella definition or overarching frame of digital literacy will necessarily involve the claims of myriad concepts of digital literacy, a veritable legion of digital

literacies.” Digital literacy is also a part of the Multiple Literacies Theory (Masny, 2009), where it stands as a one of new fundamental literacies.

The concept of digital literacy is based on computer and information literacy (Bawden, 2008). Both concepts stand separately or as a part of digital literacy. They both are defined and contain a list of competencies required to be a computer or information literate person.

The computer literacy is defined as the knowledge and ability to utilize computers and related technology efficiently, with skills ranging from elementary use to computer programming and advanced problem solving (Tobin, 1983). The skills and competencies of computer literate person are provided by the curriculum of European (or International) Computer Driving License, which is the global certification of information and communication technology and digital literacy qualification. The modules are divided into three groups – Base Modules (Computer and Online Essentials, Word Processing, Spreadsheets and Theory), Intermediate Modules (Presentation, Databases, Security, Collaboration, Image and Web Editing, ICT in Education and more) and Advanced Modules which extend knowledge of Word Processing, Spreadsheets, Presentations and Databases from previous modules (ECDL Foundation, c1997-2019). Computer literacy is focused more on technologies side of computer (and similar devices) use.

Information literacy is broader than computer literacy. It is focused not only on necessary technological skills for work with computers, but also on cognitive processes related to information. It also overlapped other literacies – library and media literacies (Bawden, 2001).

Several more literacies are important for users of information these days. One example is library literacy, which includes a knowledge of library services, resources it provides, how information is organized and an understanding of the best means of finding information in a certain library (Fatzer, 1987). Very important these days is media literacy which helps us choose information sources and prevent us to believe misinformation and disinformation in times when media information is growing (Potter, 2019, Buckingham, 2006), among other authors. We also suggest two other types of literacy. The first is financial literacy as the new devices and services allow new ways of payment and wireless communication between cards and terminals. The second is language literacy not only in focus on foreign languages but also the knowledge of mother tongue, written and spoken.

Digital, information and computer literacies serve us as base concepts for mobile information literacy. The computer literacy provides skills to handle and use mobile devices as a computer, both hardware and software. Information literacy helps understand and use mobile devices for communication of information – how to seek, process, use and share information one needs. We

place digital literacy in a broader context which allows us understand concepts of modern information services and technologies which are widely used by users of (not only) mobile devices for co-operation, networking, self-presentation, reading and sharing information and more activities in digital environment.

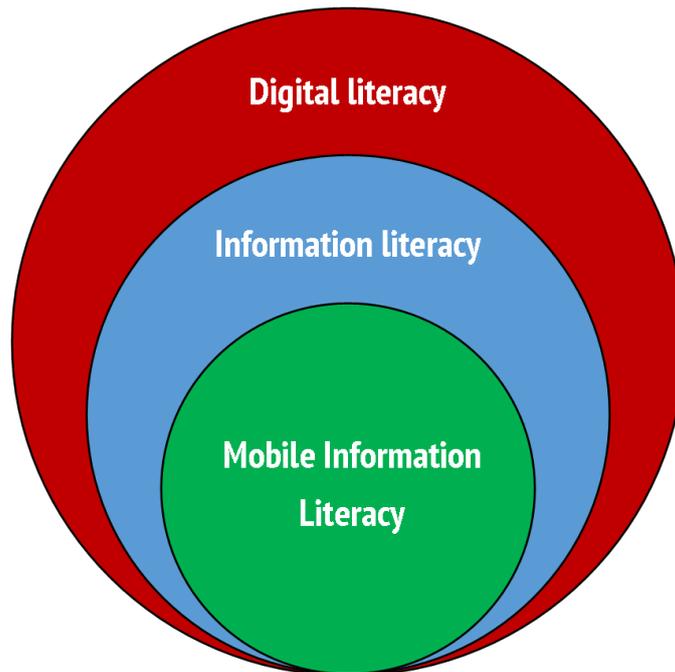


Figure 1: Simplified model of the Mobile information literacy in relation to the Information and Digital literacies. Computer literacy is a part of all three displayed literacies.

3. Mobile information literacy

We present mobile information literacy as a theoretical concept based on information literacy competencies in the mobile environment. It is based on the fact that there is a growing number of unique owners of mobile devices. Those users connect to the internet on their devices to accomplish different information tasks based on their information needs as checking e-mails, communicating with co-workers or friends, seeking information, relaxing and having fun, reading news, visiting catalogues, searching databases and more. Mobile devices and new possibilities of wireless connectivity to the internet allow us to communicate and *consume* information (almost) anywhere and anytime. This ubiquitous way to access and share information offers many opportunities not only for users of information, but also for information institutions. It can be also very challenging.

The first references on mobile information literacy appeared around 2010 in relation to libraries, education and mostly marketing. Mobile and wireless internet as well as modern mobile devices (smartphones, tablets, netbooks) connectable to the internet started to be popular at the time. Recent contributions similar to the topic of the mobile information literacy have been focused on mobile learning in 2000s. Mobile learning is a method and process of education to use mobile devices promoted for example by Alexander (2004), Corbell and Valdes-Corbell (2007), Herrington (2009), Klopfer (2008) and more.

Since 2012 there has been contributions on mobile technologies in libraries and on use of mobile technology to support information literacy. Examples are in the book by Walsh, 2012a, *Using mobile technology to deliver library services: A handbook* as well as *M-libraries 3: Transforming libraries with mobile technology* by Ally (2012). Walsh (2012b) published an article about information behaviour in mobile environment. He found six key areas where mobile devices affected the information behaviour of users and described the general information behaviour of users on the move (with mobile devices):

- desire for quick and easy searches,
- shifting from evaluation of information sources to prior selection of trusted sources,
- extension to user's memory,
- easily moving information between devices,
- constantly gaining information,
- always connected to the internet.

Another interesting approach to mobile information literacy is supporting students to use mobile devices to connect to information resources provided by academic library and grant them a user friendly way to do it as Havelka (2012) and also Havelka (2013) mentioned. There has been also interesting research on Student Information Literacy in the Mobile Environment published by Yarmey (2016). She found that students are interested in using their phones for academic purposes but they still require guidance from their educators. Information literacy instructors should become familiar with new search methods and help students understand how to evaluate information, especially when it is presented in a non-traditional form. Students may need assistance from educators in applying information literacy skills they have learned while searching on a laptop or desktop to the mobile environment.

4. Mobile information literacy competencies

The skills and competencies of the mobile information literate person should be based on the current information literacy definition of CILIP (2018): "Information literacy incorporates a set of skills and abilities which everyone needs to undertake information-related tasks; for instance, how to discover,

access, interpret, analyse, manage, create, communicate, store and share information.” The newest definition of information literacy focuses on information in all forms such as print, digital content, data, images and the spoken word. Information literacy is related and associated with other kinds of literacy, especially digital, academic and media literacy. It might be needed in the context of everyday life information needs, such as of citizenship, education, profession and health. The most important competence is the ability to think critically and make balanced judgements about any information founded. It also empowers users of information as citizens to reach and express informed views and to engage fully with society.

The competencies provided by the definition above are general and they can be applied in any area and environment related to information, the mobile environment included. What differentiates mobile information literacy is information behaviour on the move. As previously mentioned, Walsh (2012b) conducted an interview with two professionals to uncover how people seek, process and evaluate information in the mobile environment. His findings show that searching on the mobile devices is mostly in context with everyday information. Users seek information about a nearest restaurant, a train timetable, recent news etc. And they want a fast search with a quick result and don't spend time evaluating. In some cases information users find can be wrong or misinterpreted which may result in making a wrong decision or sharing disinformation.

Using mobile devices to discover and seek new information can be challenging for certain groups of users. Elderly people have problems with manipulating and handling mobile devices. On the other side, children could be vulnerable to misinterpretations and disinformation as well as be subject to other issues such as cyberbullying or violations on the internet.

We analysed mobile information literacy competencies in the curriculum of Mobile Information Literacy Course of University of Washington which is accessible online (TASCHA, 2015). The curriculum contains six modules:

- Introduction to Mobile Information and Communication Technologies,
- A Mobile Lens on the Internet,
- Basic Web Search via Mobile Devices,
- Working Online and Using Information via Mobile Devices,
- Putting it All Together,
- Module 5 Project Presentations.

The curriculum focuses on the mobile information and communication technologies, mobile internet access and applications, web search activities and managing and sharing information. The last two modules are for practical assignment. Information literacy as defined by CILIP (as well as by SCONUL, 2011, ACRL, 2016) is covered only a particularly in a module 3. However, the

curriculum can be adopted by libraries or schools for teaching mobile information literacy focusing both on technical details and understanding how mobile devices, *mobile web* and applications work. The limitations and boundaries of mobile devices represent another difference between mobile information literacy and information literacy in fixed environment. Small displays and resolutions, touch and small keyboards, battery capacity, internet coverage and connectivity, and also use of mobile devices on the move are significant limitations for using services provided in other non-mobile devices. For those services we should adapt user interface and use special applications or responsive web design.

5. Conclusions

Mobile Information Literacy is a concept about the competencies of an information literate person in the mobile environment. The ways we seek, process, use and share information on mobile devices is, in most situations, different from how we behave on desktop computers and fixed (work) environment. The difference is caused by limitations of the mobile devices and other factors such as smaller displays, touch and small keyboards, voice control, battery capacity, connectivity, responsiveness of user interfaces (webpages or applications) and by the use of mobile devices *on the move*. In the mobile environment users also want to find the perfect hit (relevant and right information) on the first attempt. They are looking for (easy) information which are connected to the current situation – looking for nearest restaurants, finding bus timetables, using the map to navigate, check prices of services nearby and more. Users do not want to seek through use of difficult queries and complex information. They expect precise and short information on the place, which means they also need to be aware of information resources (as applications, search portals or web pages) adapted for mobile devices.

However, the skills and competencies of the mobile information literate person are based on information literacy models. It is important for users of information to be able to identify information they need, to be aware of resources, to find information, to evaluate results of seeking process, to use information ethically, to be aware of their responsibility when disseminating information, to be able to communicate and share information through various devices and to manage information. Those general competencies of information literate person in digital age are valid also in information tasks provided on or by the mobile devices.

The access and use of information in mobile environment are not challenging only for the users of information. The creators of new content, distributors of information or information institutions should adapt to the growing trend of using mobile devices for access to any kind of information or service. This does not mean to change everything and provide services only *mobile way*. We can start with responsive design of our applications and webpages, edit content to be

friendly for users of mobile devices, and be prepared to lead our users through the problems and barriers caused by the limits of mobile devices.

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