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# EXPLORING DIMENSIONAL CONSTRUCTS OF DIGITAL LITERACY SKILLS FOR HIGHER EDUCATION

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# **EXPLORING DIMENSIONAL CONSTRUCTS OF DIGITAL LITERACY SKILLS FOR HIGHER EDUCATION**

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## **Abstract**

Digital literacy is essentially an indispensable skill as technology is rapidly evolving and so is advancement in information resources, especially digital resources. As the use of digital resources continue to rise within higher institutions of learning, students are expected to develop the required digital literacy skills. Digital literacy skill is a basic requirement for students to function effectively in the information society, which is experiencing a paradigm shift from print resources to digital resources. Hence, digital literacy skill becomes very important since the use of digital resources depend on the competences in using digital resources. In the fast-growing knowledge society, information literacy has become one of the most important skills. This is because students with research information needs will most likely use digital resources if they have the skills required for their effective usage. Whilst information literacy seems to be a term that is mostly associated with higher education, its application to digital resources is yet to be widely exploited. In order to foster the development of digital literacy skills through institutional curriculum, this study explores the dimensional constructs of digital literacy with the aim of having students who can use digital tools to advance learning and keeping up with changing technologies as well as become global digital citizens. The dimensional constructs of digital literacy as outlined in this study are important in the use of digital resources because of the proliferation of digital information presently experienced due to a series of developmental digital activities in our world.

**Keywords: Dimensional constructs, digital literacy, skills, higher education**

## **Introduction**

The present day society has witnessed exponential growth of digital resources especially in developed societies due to technological advancement in information technology (IT). Digital information sources can be seen as the most recent development in information technology and are among the most powerful tools ever invented in human information history. Hence, the growth of digital resources has become a global phenomenon. Digital resources is a very broad term that includes a variety of different publishing models, including OPACs, CD-ROMs, online database, e-journals, e-books, internet resource, print-on-demand (POD), e-mail publishing, wireless publishing, electronic link and web publishing. In this context, the term refers to any digital or electronic product that delivers collection of data either in text, numerical, graphical, or time based, as a commercially available resource (Haridasan & Khan, 2009). Digital information sources are becoming more and more important especially in the academic community (Adegboire, 2011). According to Abinew and Vuda (2013), libraries have transformed into digital and virtual libraries where books, journals and magazines have changed into e-books, e-journals, and magazines. This has increased the global dissemination of information. Digital resources are valuable tools for study, learning and research. They provide many advantages over traditional print-based resources: they contain current information because they can be updated frequently, they offer advanced search capabilities, they offer flexibility in the storage of the results, and they enable access to information without the restrictions of time and location. Digital resources have become the most sought after modern library's reserves in satisfying varied needs of students, teachers, and researchers with minimum risk and time. Digital resources are embedded with a wealth of information whose exploitation can positively transform research world and propagate academic research management, foster teaching and learning, comply with university legislations and cater for university modes of study (Omallah, 2013).

The growth of information in digital formats have made higher institutions to include information literacy in their curricula to enable students acquire the needed skills to find and retrieve information in a technological driven environment. Institutions of higher learning must equip students with information literacy skills, in order to produce qualified individuals, engaged in the lifelong pursuit of knowledge for personal and professional growth. Students' ability to effectively utilize digital information resources is a key issue, since it may help them to enhance the quality

of their learning as well as when they become professionals in their various field of study. Therefore, digital literacy becomes a necessity. Digital literacy is the ability to use technology to find, evaluate, create, and communicate information. Along with a working knowledge of computer software and hardware, students will benefit from an understanding of wide range of applications (e.g., word processing, presentations, web-based resources). With software applications becoming so mainstream, it is vital to be fluent in their use when entering the work force. Similarly, UNESCO (2018) proposed the following as the definition we use for digital literacy:

*Digital literacy is the ability to define, access, manage, integrate, communicate, evaluate and create information safely and appropriately through digital technologies and networked devices for participation in economic and social life. It includes competences that are variously referred to as computer literacy, ICT literacy, information literacy, data literacy and media literacy.*

### **Dimensional Constructs of Digital Literacy Skills**

From the definition of digital literacy as proposed by UNESCO, the term digital literacy covers a wide range of literacies such as a number of digital reading and writing techniques across multiple media forms, communication and collaboration, research and information gathering, acceptable use of digital resources among others. Therefore, digital literacy dimension is underpinned by basic technical use of computers and the Internet. As compared to previous studies such as Pérez (2008), where digital literacy was articulated in four dimensions (operation, semiotic, cultural and civic):

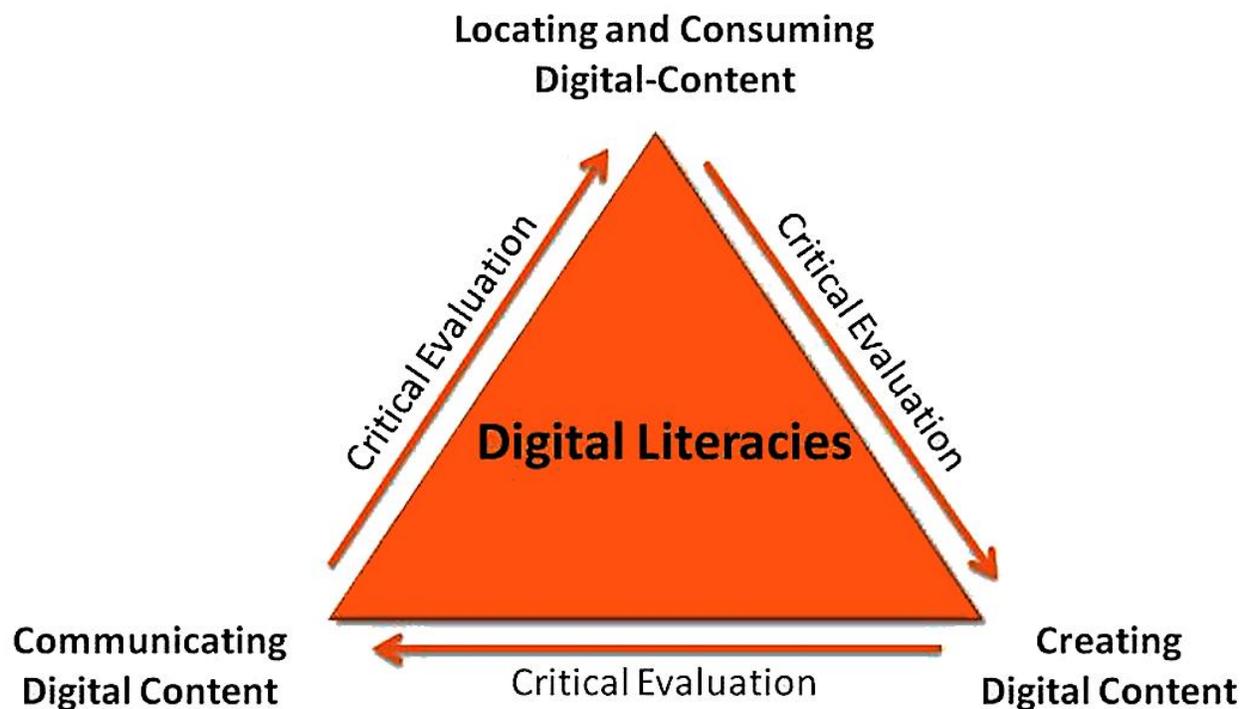
- Operational: The ability to use computers and communication technologies.
- Semiotic: The ability to use all the languages that converge in the new multimedia universe.
- Cultural: A new intellectual environment for the Information Society.
- Civic: A new repertoire of rights and duties relating to the new technological context.

However, this study adopted a similar but more simple conceptualization of three-dimension construct by Spires and Bartlett (2012), using the straightforward definition of digital literacy by Martin (2008). According to Martin (2008), digital literacies cover five key elements:

- Digital literacy involves being able to carry out successful digital actions embedded within work, learning, leisure, and other aspects of everyday life;

- Digital literacy, for the individual, will therefore vary according to his/her particular life situation and also be an ongoing lifelong process developing as the individual's life situation evolves;
- Digital literacy is broader than ICT literacy and will include elements drawn from several related 'digital literacies';
- Digital literacy involves acquiring and using knowledge, techniques, attitudes and personal qualities and will include the ability to plan, execute and evaluate digital actions in the solution of life tasks;
- It also include the ability to be aware of oneself as a digitally literate person, and to reflect on one's own digital literacy development.

This study explores how different dimensions of digital literacy are important in order for learners to develop evaluative dispositions as they navigate digital content Spires and Bartlett (2012) divided the various intellectual processes associated with digital literacy into three categories: (a) locating and consuming digital content, (b) creating digital content, and (c) communicating digital content. The three categories is presented in figure 1



*Figure 1. Digital literacy practices involve the ability to locate and consume, create, and communicate digital content, while simultaneously employing a process of critical evaluation. Adopted from Spires & Bartlett (2012)*

Learners must develop evaluative dispositions as they navigate digital content. A discerning mindset is essential in order to interact with online resources with accuracy. Without critical evaluation, the learner may easily be directed by the technology rather than the learner directing the inquiry. It becomes essential to develop digital literacy skills to locate, comprehend and consume digital content on the Web. Central to being effective with the Web is strategically searching for information and evaluating its accuracy and relevancy (Leu et al., 2008). Hence, there is consensus among scholars that effective Web search skills must be developed for educational success in a digital society. Similarly, the ability to create digital contents is very important in digital literacy model especially in an academic environment. Digital content is easily created by teachers and students alike through multiple media and a variety of Web 2.0 tools. The application of digital content may be an important and effective method of enhancing teaching and learning (Bakkenes, Vermunt, & Wubbles, 2010), enabling teachers to embrace the 21st century skills that students are expected to master. Students' use of digital resources can help teachers have time for other academic activities, allowing them to spend more time facilitating student learning and less time lecturing. Allowing students to create and consume digital content in the classroom may increase engagement while also encouraging the development of skills needed for a technological society. With the inadequate technical expertise in developing countries, students from such countries can spend more time on the quality of the content rather than learning the process of a new tool. Although the creation of a new digital content is becoming increasingly simple, personalization of learning will require teachers to locate and utilize a variety of digital resources to meet the needs of every learner. Personalization will also put a weightier emphasis on asking students to show mastery of learning by creating digital content. This multiplicative process requires additional time from teachers in terms of designing appropriate instructions for performance-based learning. Also, digital content must be communicated effectively in order to be a useful informative medium. Using social networking sites like Facebook, Skype, Twitter, and Instagram requires users to understand and manipulate information in multiple formats. The use of Social Networking Sites among students have been recognized as advantageous in terms of enhancing communication, collaboration and the potential for the promotion of and support for learning (Junco, 2011). Social networking sites are digital resources bequeath to the modern society through the instrumentality of the internet and the telecommunication gadgets. Social networking sites have become very popular among students as a means of interpersonal and public

communication across the globe. This has been made possible with the help of digital technologies (tablet, smart phone, notebook, etc.) and internet (Boyd & Ellison, 2007) to communicate digital information. Social networking sites are regarded as modern interactive communication channels through which users connect to one another, share ideas, knowledge, pictures, messages and experiences. According to Kaplan and Haenlein (2010), social networking sites enable users to connect to each other by creating personal information profiles, inviting friends and colleagues to have access to those profiles, and sending e-mails and instant messages between each other. Being able to communicate digital content using mobile devices such as cellphones and tablets provide convenience and immediacy to the communication process for teachers and students. Additionally, it provides access to an infinite set of people and digital content resources globally to enrich the learning experience. This type of communication affords the possibilities of more customization and personalization for individual learners' interests and needs, which has the potential to increase student engagement in academic learning.

The importance of digital literacy cannot be over emphasized as digital technologies continue to spread across the globe. The lack of digital literacy skills will result to digital divide which is a gap in access to or usage of digital resources between people, demographic groups, or countries (OECD, 2001). However, in the 21<sup>st</sup> century, the global digital divide is not one of access to the internet but one of users' competence with digital devices. The world has become more connected than ever as a result of exponential growth in technology, and as a result, technology users have had to learn how to become "digital citizens" (Isman & Canan Gungoren, 2014). According to UNESCO, the importance of digital literacy is evidenced by the many national and regional efforts to develop and implement digital literacy frameworks and strategic plans to bolster citizens' digital literacy. Therefore, digital literacy concepts and skills can provide the fundamentals of managing digital environments that students need to succeed in this digital information age. However, what is required of academic institutions is to recognize the importance of digital literacy in providing rich educational experiences for students in higher education through the introduction of digital literacy into institutions' curriculum.

## **Conclusion**

The aim of this study is to develop knowledge and understanding of digital literacy among students of higher institutions in order to ensure competences especially in this era where digital technology is rapidly evolving as well as advancement in digital information resources. The dimensional construct of digital literacy if embedded into curricula will provide students the needed digital literacy skills to access, evaluate and increase students' ability to use information resources from digital formats since digital literacy has become the new approach in addressing the lack of competency in using digital information resources globally. Therefore, librarians and other stakeholders have an obligation to their institutions to inform broader discussions of curricula with regards to digital literacy in their efforts to provide qualitative educational experiences for students in higher education since digital literacy is the bedrock and basis for using information technologies and digital resources. There is the urgent need for educational institutions to provide professional development for teachers in order to educate teachers as to how they can teach their students to be digital citizens. Although digital citizenship is a fairly new concept, it is one that is highly important in our globalized, virtual world. It involves not only competent technology use, but also responsible and ethical use of the web. Hence, digital citizenship is largely considered an aspect of digital literacy, and academic institutions are encourage to include digital literacy education in their respective curriculum.

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