Digital Literacy Readiness of Graduates of Philippine Higher Education Institution

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Abstract: The critical thinking and evaluation skills that are so important for employment in the digital age, which is frequently distinct from the institutional setting, were reinforced by instruction in digital and information literacy. The purpose of CNU-Balamban Campus as a higher education facility is to equip students with the skills necessary to adhere to a prescribed curriculum and adjust to workplace needs, enabling graduates to make the best decision possible. A digital literacy assessment of the alumni's skills was carried out to determine how equipped they are to operate in the hotel and tourism industries. Data were collected from 117 graduates of Bachelor of Tourism Management Program. A digital literacy skills list was used to assess the level of confidence based on its identified range. Data collected show the premier level of understanding digital practices skills by the graduates. Aside from the digital knowledge skills, knowing what categories of users you can expect to find online were notable responses. The graduating class preferred using social networks as a source of information when it came to information discovery skills. They were also most interested in using information abilities in a variety of media. Using a Pearson r outcome, reveal a significant relationship between the levels of digital literacy skills of the graduates. It was shown that as the level of digital literacy skills increases, the digital literacy skills correspondingly increase. It was apparent that the digital literacy skills of the graduates were significantly related to the level of confidence to find and use information. Undoubtedly, what goes beyond this is expanding the scope of the endeavor to include communication, teamwork, and collaboration as well as social awareness in the digital world, a comprehension of e-safety, and the timely generation of fresh material for the millennial generation of today.

Keywords: digital literacy skills, higher education, digital age readiness, being digital, level of confidence

1. Introduction

Information Technology (IT) is advancing so quickly in today's world that almost no industry is untouched. IT is beneficial in the field of higher education for several uses that not only fulfill the promise of the technology but also encourage the creation of creative solutions to issues and activities. (Herdianto, R., 2018).

A multimodal view on information must be accessed, organized, understood, and evaluated using digital technology (Pegrum, M., Dudeney, G., & Hockly, N., 2018). Additionally, it entails taking part in the quickly developing digital communication channel by managing, producing, sharing, and interpreting meaning (Liza, K., & Andriyanti, E., 2020). As the definition of digital literacy expands, as far as the variety of skills and information that make it up, software literacy is becoming increasingly important (Khoo, E., Hight, C., Torrens, R., & Cowie, B., 2017).

The concept of digital literacy encompasses the abilities to utilize computers and technologies as well as the skills to critically analyze information, also known as information literacy, visual literacy, operate digital contents, or software literacy, and absorb visual media (Spante, M., Hashemi, S. S., Lundin, M., & Algers, A., 2018).

Information and knowledge are the new era's resources, and they are what spurs development. The rapid expansion of information made possible by information communication technologies (ICTs) enables far faster data generation, archiving, transmission, retrieval, and processing. Since educators today recognize that learning continues long after formal schooling has ended, the total benefits on lifelong learning are enormous. How to ensure that everyone has equitable access to this informational resource and how to prepare all individuals for the new global environment are crucial challenges that educators must address.

The fast development of information and communication technology has had a significant impact on the environment for higher education and training. ICT's capacity to enable cross-border knowledge transfer means that even the delivery of higher education can shift from a teacher-centered to a student-centered paradigm. High-quality higher education and physical activity are essential for economies that want to advance beyond the fundamentals of academic teaching. In particular, the modern economy's trend toward globalization necessitates that countries maintain labor pools of educated people who can quickly adapt to both their environment's and the educational system's changing demands.

ICT has significantly changed the way that people do their jobs and new positions have been created. For instance, in the marketing, configuration, and support of new technologies; and in the administration and maintenance of computer networks and systems. For programmers, systems analysts, web designers, and others who maintain websites, as well as in the communication technology areas, hospitality and tourism services, and manufacturing industries, careers that did not exist before ICT have become available. At the same time, several previous positions have changed or disappeared. Many employees in the hospitality and tourism industries have been replaced by computer- or microprocessor-operated technology, and as computerization has boosted job efficiency, fewer employees are needed. Unskilled workers are especially susceptible when computers take over repetitive tasks from people.

Even in industries like hairdressing, painting, and interior design, efficiency has grown thanks to information technology for tourism management. In contrast, certain trade skills like those in the printing industry where the use of ICT has been rapid, some trade skills like typesetting and engraving have gone out of date. As a result, many routine tasks at banks and libraries have undergone major change since staff workers now need to learn new skills for finding and using information online.

ICT have significantly altered employment since workers now do tasks that were formerly handled by others for example photocopying and word processing (formerly known as typing). As a result, the distinctions between different professions become hazier, increasing the demand for multiskilled individuals.

A significant contributor to the requirement for the new kind of knowledge is the exponential growth of data in worldwide repositories. New graduates must develop information digital literacy and other related skills in order to seek information from the seemingly infinite sources on the internet, to evaluate this knowledge, and to select intelligently from it.

ICT advances are accelerating at the same time. As an illustration, both regionally and worldwide, the use of mobile phones has drastically expanded. According to the International Telecommunications Union (ITU), there will be 15.6 billion mobile cellular subscriptions globally by the end of 2020, which they refer to as "the mobile miracle" (ITU, 2015). Currently, smartphones are used for everything from texting to video chats to transferring pictures and movies. They can even be used for internet searches. They are also used to transmit and receive emails, as well as for weather and street maps. If more recent ICT developments like these are to be improved in education, new graduates need new capabilities.

It is critical for educational institutions to prepare recent graduates for life and work in the quickly changing digital world, which necessitates a larger range of skills to function in the twenty-first century.

2. Conceptual Framework

The increasing population and educational rates make it difficult for many people to exercise their fundamental right to education today. According to IRA, 2013, there are around a billion people lack a basic education worldwide (IRA, 2013). Information and communication technology (ICT) use is driving the development of a new educational paradigm (ICTs).

There are many terms used to describe the skill sets that students (and their teachers) need in the digital age of the twenty-first century, including digital literacy, e-literacy, new knowledge, screen literacy, multimedia literacy, information literacy, and ICT literacies. ICT has caused concepts of digital literacy to dramatically advance past the outdated notions of print-based literacy. The ability to read and write a range of codes, such as "icons, symbols, photos, graphics, animation, music, and video," is now a must for being considered digitally literate (Nallaya, 2010, p. 48).

Whatever terminology is used to define the competencies that today's youth must acquire, it must encompass foundational literacy, ICT-based reading and writing, as well as the numerous new connected skills that Nallaya has identified.

Reading and writing are the two key components of digital literacy. Screen reading, internet browsing, keyboarding, mailing, typing, and texting are a few instances of how these tasks can be extended electronically in addition to reading printed pages and writing on paper. These electronic equivalents of reading and writing are shown in the center of the screen portrayed in Figure 1.
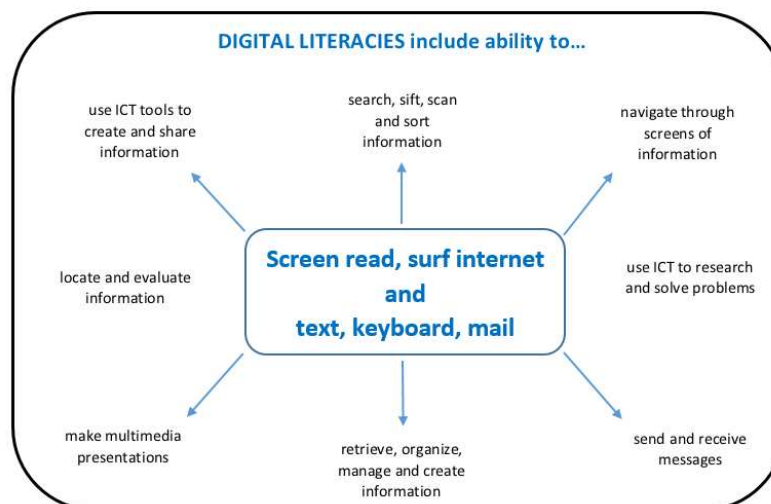

Figure 1. Digital literacies include a quantity of abilities that extend notions of (a) screen reading and internet surfing [reading] and (b) texting, keyboarding, and mailing [writing]

The screen reading and writing in Figure 1 are accompanied by several related skills that other authors have variously referred to as information literacy, media literacy, or visual literacy. Digital literacies include the following related skills, which are a subset of associated abilities: using ICT skills to create and share information; searching, sorting, scanning, and evaluating information; navigating through information screens; locating and evaluating information; using ICT to conduct research and solve problems; creating multimedia presentations; retrieving, organizing, managing, and creating information; and sending and receiving messages.

Additionally, the types of writing that students now encounter with are diverse and are a part of their everyday lives. These texts comprise the numerous codes identified by Nallaya (2010) above: icon, symbols, visuals, graphics, animation, audio, and video. Nallaya continues:

> "The language learning process can become less authentic if teachers do not recognize these texts as part of the library of textual resources in the classroom. They may also cause learners to become disengaged from regular classroom learning and teaching activities" (Nallaya, 2010, p.48).

The combination of the depiction in Figure 1 and the usage of multi-model compositions in the classroom should make it easier for teachers and teacher educators to discern between the wider variety of abilities that are now demanded of recent graduates. People must be digitally literate in order to handle the demands of life and work in the ensuing decades of this century.

By describing the ways in which students of the 21st century vary from those of their parents' generation and the new types of education required by the digital age. It is recognized that the Partnership for 21st Century Skills' work in identifying the skill clusters that new graduates need to operate in the workplace and live in the 21st century. The final section explains how digital literacy goes much beyond traditional ideas of literacy centered on print. The phrase "Digital Citizens of the 21st century" can be used to refer to students and educators who enhance their ability for social engagement, as seen in Figure 1.

3. Methodology

Digital literacy involves communication, teamwork, collaboration, social awareness in the digital world, knowledge of e-safety, and the ability to produce new information, in addition to information literacy, or the capacity to access and use information.

The DIL framework defines digital literacy as the knowledge, abilities, and attitudes that CNU new graduates possess while using digital tools to further their academic, professional, and personal objectives. The framework describes five 'stages of development' of digital literacy skills, competencies and dispositions and maps them against the 'levels'. The framework is divided into five competence areas: understanding and engage in digital practices; find information; critically evaluate information, online interactions, and online tools; manage and communicate information and collaborate and share digital content. Competences for each area determined have been divided into levels and stages: access/level 0; foundation digital stage/level 1; interactive and co-operative digital practice stage/level 2; personalized and collaborative digital practice stage / level 3 and professional and digital identity stage / masters. These determine the complexity of learning involved and map to the levels of CNU new graduates.

An assessment of the alumni's digital literacy skills was conducted to determine whether they are ready to work in the hospitality and tourism industries. The data were gathered from 117 Bachelor of Tourism Management program alumni. This checklist will assist Cebu Normal University in determining the students' level of comfort with various aspects of digital literacy. Determine the skills in which respondents claimed they were 'very confident', 'quite confident' or 'not confident', and use the digital exercises to help improve the overall methods of instruction for the next classes. The survey represents an exclusive source of insights on understanding digital practices; finding information; using information and creating information.

The survey data was organized, and statistical calculations were performed to examine the correlations between the various factors. The answers to the closed-ended questions are entered into a computer and are then statistically assessed. To calculate the percentage and frequency distribution of the respondents on the variables, descriptive statistics were used. Moreover, correlational analysis is applied to see the relationship between variables.

Finally, the results are summarized, and significant interpretations of result are made to draw the conclusions and implications.

4. Result and Discussion

This section analyses and deliberates the major findings of the research based on the collected data through questionnaire. The result is presented emphasis on the relationship between the graduates' level of confidence and the digital literacy skills essential for employability.

Table 1: Relationship between the level of confidence of new graduates and the Digital Literacy skills essential for employability.

Digital Literacy Skills		Level of confidence of new graduates
Understanding digital practices	Pearson Correlation	.412**
	Sig. (2-tailed)	.000
	N	117
Finding Information	Pearson Correlation	.419**
	Sig. (2-tailed)	.004
	N	117
Using Information	Pearson Correlation	.495**
	Sig. (2-tailed)	.001
	N	117
Creating Information	Pearson Correlation	.547**
	Sig. (2-tailed)	.009
	N	117

**. Correlation is significant at the 0.01 level (2-tailed)

A Pearson's correlation was designed to determine whether there was a relationship between new graduates' level of confidence and the digital literacy skills for employability as categorized in the different digital literacy skills (understanding digital practices, finding information, using information, and creating information) as seen in Table 1. The results of the relationship indicated that there is a significant connection between the graduates' level of confidence and the digital literacy skills essential for employability.

One of the most important aspects of digital literacy is understanding the many sorts of people you could come across online; explaining what happens to information you put online: your digital footprint; choosing the right tool to find, use or create information; presenting yourself online: your digital identity; finding a person online; using online tools and websites to find and record information online; establishing who owns information and ideas you fine online and establishing what online information you can legally re-use indicates that new graduates of Bachelor of Tourism Management has a strong confidence when these skills were integrated in the teaching-learning process in each course.

Subsequently, digital literacy skills on discovering information which embraces: knowing what information you can find on the web and online Library; using advanced search options to limit and refine your search; using keywords commonly used in your ways to search for information online; using social networks as a source of information; knowing when to change your search strategy or stop searching; filtering large numbers of search results quickly; scanning/skimming a web page to get to the key relevant information quickly and keeping up-to-date with information from authoritative people or organizations by subscribing to RSS feeds have a great impact as to the graduates' level of confidence in the workplace.

Using information media, such as podcasts or videos, and successfully utilizing digital literacy abilities are essential; determining the reliability and trustworthiness of an internet source or individual; not plagiarizing when using other people's work (discovered online); citing a reference to an online resource (e.g. in an assignment) using the correct format; keeping a record of the relevant details of information you find online. Regarding how crucial it is to remain up to date with knowledge in the workplace, the new graduates' confidence level was substantially connected with both their legal file sharing with others and their use of social bookmarking to organize and share information.

Lastly, digital literacy skills on making information on adding comments to blogs, forums or web pages, observing netiquette and appropriate social conventions for online communications; writing online for different audiences, e.g. a web page or blog entry for private use, for reading by your fellow students, for reading by your tutor, or for reading

by anyone in the world; writing in different media for people to read on-screen; communicating with others online; working with others online to create a shared document or presentation and using media-capture devices, e.g. recording and editing a podcast or video played a significant role in developing the digital literary skills that the new graduates must have in the workplace.

5. Conclusion

The results of this study demonstrate that new graduates of the Bachelor of Tourism Management program at Cebu Normal University's Balamban Campus must be digitally literate to be employable. The degree of assurance in one's understanding of digital procedures and their capacity to locate, use, and produce information was also very important across all variables. The correlational results showed a strong correlation between graduates' degree of confidence in their digital literacy abilities. This implies that if digital literacy abilities necessary for employability were integrated in the major and minor courses and vice versa, the alumni's level of confidence in the job would grow.

One of the key components in the implementation of ICT and digital literacy skills in education is the material's accessibility. However, the results revealed that although the instructors at Cebu Normal University's Balamban Campus are eager to employ ICT resources, they encounter obstacles in doing so and a dearth of training opportunities. Overall, instructors claimed they were aware of the benefits of ICT integration but were unable to put it into practice due to a lack of understanding.

As a result, boosting ICT investment alone won't be effective in reducing the degree of new graduates' ready for digital literacy without simultaneously growing higher education and training growth. In addition to making computers accessible, we must also make higher education institutions and training programs widely available and simple to access in order to close the digital gap.

6. Recommendations

The following suggestions were made based on the information obtained and the conclusion reached:

Building learning networks or personal learning networks which involves connecting with recent graduates in the same field, graduates from other disciplines at surrounding institutions, and graduates with specialized development is one of the beneficial strategies.

According to Anderson and van Weert (2002), a good place to start is to interact with like-minded people in your profession, get together, and share information and engage in debate about ICT issues. Peer coaching is a procedure in which two or more colleagues who are also teachers work together to discuss problems, share experiences, and aid with the aim of furthering their careers. Like peer review, peer mentoring matches a more seasoned professional with a less experienced one. The mentor in this relationship provides comments and helpful suggestions for enhancing practice while they observe each other's education and engage in problem-solving sessions.

Communities of practice, as the phrase was first used by cognitive anthropologist Etienne Wenger, are produced using ICT in the establishment of learning networks. Communities of practice are "formed by people who engage in a process of collective learning in a shared field of human action and who share a profession, craft, or passion" (Wenger, 2006). As a result, a group of educators who work together to enhance their knowledge on how to integrate ICT into their instruction are appropriately referred to as a community of practice or professional community of practice.

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References

Anderson, J., Van Weert, T., & Duchâteau, C. (2002). Information and communication technology in education: A curriculum for schools and programme of teacher development.

Armstrong, S., & Brunskill, P. (2017). Information literacy: Separating fact from fiction. Teacher Created Materials.

Becker, B. W. (2018). Information literacy in the digital age: Myths and principles of digital literacy. School of Information Student Research Journal, 7(2), 2.

Gebremedhin, M. A., & Fenta, A. A. (2015). Assessing Teachers' Perception on Integrating ICT in Teaching-Learning Process: The Case of Adwa College. Journal of Education and Practice, 6(4), 114-124.

Lestari, S., & Santoso, A. (2019). The roles of digital literacy, technology literacy, and human literacy to encourage work readiness of accounting education students in the fourth industrial revolution era. KnE Social Sciences, 513-527.

Letigio, CJ., & Balijon, D. 2015. Network Readiness: Vis-à-vis Highers Education and Training for Global Reach. Published Research Paper. Cebu Normal University accredited CHED Journal. June 2015.

Liza, K., & Andriyanti, E. (2020). Digital Literacy Scale of English Pre-Service Teachers and Their Perceived Readiness toward the Application of Digital Technologies. Journal of Education and Learning (EduLearn), 14(1), 74-79.

Nallaya, S. 2010. Impact of Multi-modal Texts on the Development of English Language Proficiency. Unpublished doctoral thesis, The University of Adelaide, Australia.

Olele, C. N., & Arokoyu, A. A. (2019). Changing Literacies, Transformative Pedagogies: Implications for Knowledge Generation, Transmission through Soft Skills Development.

Pegrum, M., Dudeney, G., & Hockly, N. (2018). Digital literacies revisited. European Journal of Applied Linguistics and TEFL, 7(2), 3-24.

Pianfetti, E. S. (2001). Focus on research: Teachers and technology: Digital literacy through professional development. Language Arts, 78(3), 255-262.

Herdianto, R. (2018). Development of Higher Education E-Learning Using E-Learning Maturity Model (eMM).

International Telecommunication Union. Handbook for the Collection of Administrative Data on Telecommunications/ICT. Geneva, 2015.

International Telecommunication Union (ITU). 2015. Measuring the Information Society – The ICT Development Index. http://www.itu.int/net/pressoffice/backgrounders/general/pdf/5.pdf

International Telecommunication Union (ITU). 2015. Measuring the Information Society 2015. http://www.itu.int/ITU-D/ict/publications/idi/2015/index.html

International Reading Association. 2013. International Literacy Day. www.reading.org/general/Conferences/InternationalLiteracyDay.asps

International Telecommunication Union and others. Measuring the WSIS Targets: A Statistical Framework. Geneva: International Telecommunication Union, 2015. http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2010-11.pdf

Khoo, E., Hight, C., Torrens, R., & Cowie, B. (2017). Software literacy: Education and beyond. In Software Literacy (pp. 91-99). Springer, Singapore.

Liza, K., & Andriyanti, E. (2020). Digital Literacy Scale of English Pre-Service Teachers and Their Perceived Readiness toward the Application of Digital Technologies. Journal of Education and Learning (EduLearn), 14(1), 74-79.

Reedy, K., & Goodfellow, R. (2012). Digital and information literacy framework. Open University.

Wenger, E. (2006). Communities of Practice: A Brief Introduction. http:/www.ewenger.com/theory /communities_of_practice_intro.htm