

# A FRAMEWORK TO EVALUATE DIGITAL LITERACY AWARENESS

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**Abstract:** The aim of this paper is to propose a framework to evaluate the awareness of digital literacy among students. This paper mention about the ways to develop the knowledge performance towards students by practicing good skills to deal with the appropriate digital tools and knowing variety types of digital tools which can be used in digital literacy among students.

**Key Words:** awareness; digital literacy; digital tool; information literacy; knowledge performance.

## 1. Introduction:

Nowadays, in dealing with the rising of the technologies, students need to be encouraged to be ready to obtain lifelong knowledge and skill in the learning environment. The understanding of the concept of digital literacy has to go through long-term development and its current appearance is characterized by complexity and technology skills but also cognitive and attitudinal components of behavior. (Reynolds, 2008 ; Reynolds, 2016) notes that definitions of digital literacy are often skills, and practically in uses of related technologies, thus tethering them to a given historical moment in time. The definition frequently used is a confident and important use of ICT for work, leisure, learning and communication (European Commission, quoted in JISC InfoNet, 2012; Hall, Nix & Baker, 2013)

Digital literacy is not a new strategy for a student to gain the information and knowledge needed. The capability to use the technology to allow us to right to use the materials is a key aspect of digital literacy. As a starting point, the obvious aspect of digital literacy is an internet. The internet is a no longer complementary tool but primary need in this era (Rahmah, 2015). Mastery of technology tools and digital skills becomes a barrier to entry and be a participation in online cultures and contexts. And this accessibility has extremely empowered all of us, students and non-student alike.

Indirectly, digital forms of information and communication has delivering and transforming what it means to work, study, research, perhaps even to think using a technology. In education, students and teacher does not escape to this transformation, and comes up the need to people who need technologies tools and admit of computer's literacy is an important competency in the 21st century. To access information, sharing information, in the different places, technologies has made people reduce their burden. Some of the traditional method and tools need to be changed to new ways by introducing them the digital literacy tools. By exposing the digital literacy tools and method, the creativity and learning session for the student might be more creative and interesting.

## 2. Literature review:

Phenomena of digital literacy in modern era must be promoted and being spread towards the students from all ages. Thus, several aspects related to digital literacy need to be stress for the awareness of the digital literacy among students.

### 2.1 Knowledge performance:

In US society, digital technologies have become ubiquitous in organizational, professional, method of communications, ways of learning and personal contexts, and technology uses among the populace have been associated with cultural capital and social mobility (Hargittai 2010; Reynolds, 2016). In the 21st century, there is a new relation between knowledge and apprenticeship (Starkey, 2011 ; Goulão & Fombona, 2012). United State President, Obama said that education was delivered to kids nowadays held in the 20th-century school in the when they should be prepared for 21st-century jobs (Rahmah, 2015) In this field, the use of technologies is extremely important to make easy the access to

knowledge. In an advance century which consists of a variety of technology made, we become aware that the knowledge acquired today is easy to be exceeded.

The new age group has a different perspective about how to find and access information and also they have different perspectives towards research. They need help for information literacy (Secker, 2010 ; Cakmak, Özel & Yilmaz, 2013). As a teacher, we need to understand how to fit in students in learning materials so that they will meet their qualification requirements (Hall, Nix & Baker, 2013) So, the teacher roles gain another dimension. Despite all these new tools, the student cannot explore much for themselves. Because of that, it is really important the pedagogical relation created between the teacher and student towards the way they build activities taking more advantage of the tools for digital literacy activities. This is why distance learning, together with online teaching, based on these technological tools and pedagogical relations, has a determinant role as for an initial formation, as for a formation along life (Goulão, 2010 ; Goulão & Fombona, 2012).

While more professional development and online learning platform options for integration of the technology are becoming a new systems for deployment in schools (both for free online and at cost to districts), teachers are put an effort towards technology integration for a variety of reasons, including lack of clarity on effective uses, lack of cost or leadership support, and school leaders prioritization of test-driven accountability goals (Norris & Soloway 2011; Reynolds 2016). Rahmah (2015) stated that education and technology are inseparable. Thus, no matter what the digital literacy need to be exposing to the students who need to deal with the development of technology in the 21st century.

### **2.2 Digital technology skills:**

In the local context, Tan, Nga, & Saw (2010) and Shariman, Razak & Noor (2012) have looked into the online activities and writing practices of urban Malaysian youths. Nevertheless, the youth in Malaysia applied the skills on using the technology for social activities, gain knowledge and upgraded their writing skills from entertainment and social networking sites like blogs. According to Shariman, Razak & Noor (2012) on the other hand, they do not use these skills for applying to a critical reading, analysis, and evaluation of digital contents purpose. Instead, they simply access and download digital contents, if needed for school projects and assignment, without taking it as an important for gaining the information. Furthermore, information literacy and ICT skills are important for students nowadays. According to Hall, Nix & Baker (2013), the digital literacy skills are mainly important towards the work-based learning and leading to professional qualifications. However, digital literacy skills are also widely necessary in another scope, not just for professional qualifications and graduations but also for more common use in the study, at home and work. Other than that, facts are rising of high changes in knowledge practice, for example practically in the way academic writing is usually constructed, the use of graphical, image and media to find and share the knowledge. For that reason, digital literacy extends beyond technical competence skills, such as the ability to writing, presenting, and communicate using a keyboard. Those skills related with the technology need to be delivered to the students from the early age.

### **2.3 Technology tools:**

Talking about digital literacy disassociated with the term digital technologies. A familiar term representing digital technology in daily use is a gadget, defined as a mobile device used to interact with digital media such as text, images, audio, videos, game, and online-based for communication between two or more people (Rahmah, 2015). Basically, there are three dimensions of digital literacy learning material which is technical, cognitive and socio-emotional. Technical related to the use and interact with the digital technology devices. Cognitive is relative to create, evaluate and retrieve the useful digital information and meanwhile, socio-emotional is to responsibly use digital technology for socializing, learning and communications such as social media literacy. As society going advance, the demand for digital technologies in the classroom increases rapidly. To meet the changing and demand, iPods, iPads,

and the SMARTBoards are needed into some classroom for the some country. Portable electronic touch screen devices such as the iPad and iPod are increasingly a part of technology tools in aspects of current childhood experiences including those of schooling (Kucirkova, et al., 2013; O'Mara & Laidlaw, 2011; O'mara, 2015). Those tools have changing literacy instruction and the way of students learning. According to Saine (2012) teachers also claim students become more creative in their thinking. Despite that, mobile phone and web 2.0 tools for example blogs and wikis also had been a part of digital technologies. The affordances of touch screen devices recommend young and preliterate children the possibility to independently design, create and produce their own words in ways that are more easily facilitated than with tools such as paper and pencil (Flewitt, Messer, & Kucirkova, 2014; O'Mara & Laidlaw, 2015). O'Mara & Laidlaw, (2015) stated that for children who have disabilities or learning challenges, digital tools can offer new opportunities and experiences to ease of access and creation of text, particularly those for whom the physical burdens of handwriting present particular struggle. Nevertheless, socialize tools involve the student commitment in social interactions and channel of communication with peers, to exchange ideas, helping each other, and provide feedback on their original creative ideas. (Greenhow et al., 2015; Reynolds 2016) find that high school and college students can become more energetic, intelligent debate about scientific issues in a free Facebook forum, involve with the productive, constructive social engagement for knowledge building through the use of social media tools.

**3. Model comparison:**

Finding for relevance based on past literature review above can be summarized into several concerning items for making the students aware about digital literacy. First, Digital literacy becomes one of the knowledge transferring method. Littlejohn, Beetham & McGill (2012) said that academics become aware of the foundational nature of digital capabilities when they adopt technology-enhanced learning approaches and their understanding of the importance of learner's ability to search the sources, apply and create a new knowledge in a digital environment evolves as they deal with the variety of technologies skills, experiences, and preferences among their learners. Some finding that has been found is the feeling using online learning method to sharing knowledge purpose in general.

Referring to the analysis by Goulao & Fombona, (2012), overall, online learning sharing and gaining information are involving the highest percentage of the student. They are believed in the supporting materials to the teaching system and the acquired knowledge in the course (100%). (79%) of the student tells that individual preferences are counting into account in the online learning, They consider this kind of learning allows a sufficient communication for (93.3%), not to be an accent (100%) but they notice that this system requires more learning time to be expert (53.7%). So for them, online learning offered itself as a learning system in which individual preferences are counting into account and a sufficient communication is used. The motivation, positive evaluation of gaining the materials and receiving the knowledge through eLearning is clear expressed.



Fig. 2. Goulao & Fombona, (2012)

From the research by Goulao & Fombona, (2012), Fig. 2 above has been concluding using the technique of content analysis. Referring to this data, they come out with a few of analysis categories. The interesting one is below.

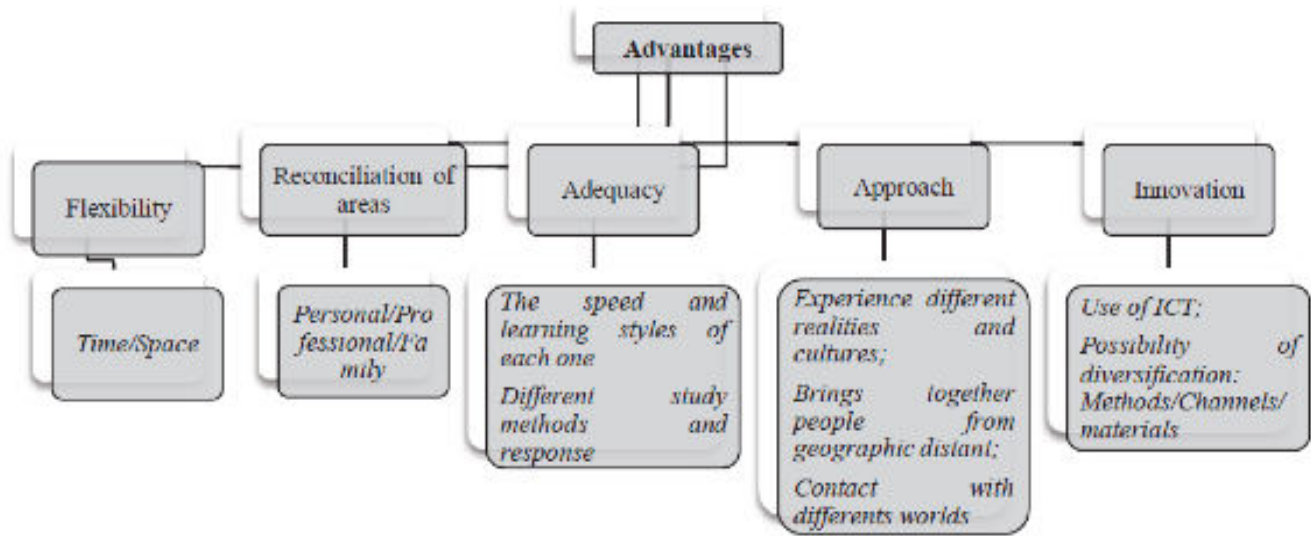


Fig. 3. Goulao & Fombona, (2012)

For some student, these advantages have described as a "Liberator". In general, online learning giving student advantages in terms of knowledge seeking and sharing purpose. However, students need to have skills about the system as well. Other than that, research by Shariman, Razak & Noor (2012) has shown the sample of criteria which fail to delivery, sharing and exchange the knowledge through digital literacy.

<b>Age</b>	Youths between ages of 19 - 23 years (First to Fourth year students)
<b>Gender and Race</b>	Mixed race groups which consist of Malays, Chinese and Indians.
<b>Current lifestyle</b>	Living in student housing and studying in universities which have excellent network and computer facilities for students' use.
<b>Socio-economic background</b>	Limited income due to family background that is considered poor (household income of RM3,000 and below for families with three or more children). All students have either Government study loans or scholarships to support their studies.
<b>English Language Proficiency</b>	Lack proficiency in the English Language; English is used as a foreign language.

Fig. 4 Shariman, Razak & Noor (2012)

The figure shows five criteria samples which indirectly affect the failure of delivery the knowledge by using technology or digital literacy. As a mention in the article, current lifestyle and English language proficiency is the major barrier. Current lifestyle is referring to the student housing or university which provide a good network or facilities to the student for their online session and gaining knowledge. Meanwhile, lack of English language proficiency indirectly giving some effect because of most all of sharing knowledge method is using the English language. This shows that Digital literacy happened and most of the people demand it.

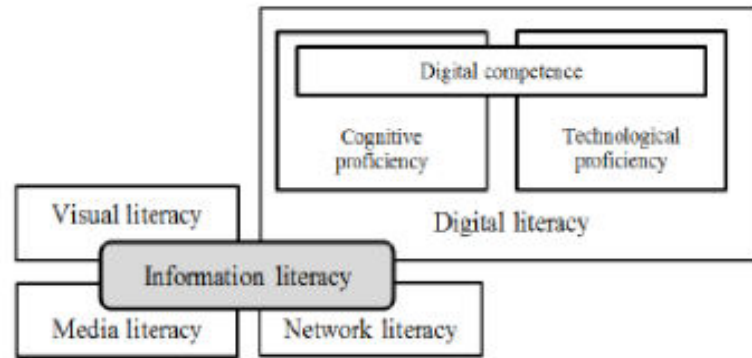


Fig. 5. Javorsky & Horvath (2014)

Based on the previous article by Javorsky & Horvath (2014), figure 2 shows that the Digital competence and in relations within information literacy. Digital competence is related much with the cognitive proficiency and technological proficiency.

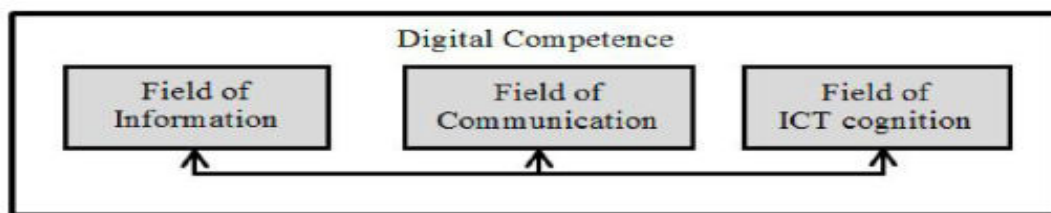


Fig. 6 Javorsky & Horvath (2014)

Based on Fig. 6, there are three fields of capabilities within digital competence which is a field of information, field of communication and field of ICT cognition. Fields of the digital competence is a key for information processing which can retrieve, access, and exchange the information or knowledge.

The analysis was done by Cokmak, Özel & Yilmaz, (2013) state that the digital literacy skills also required well structured. Referring to the analysis, an organization called Turkish Academy is using Moodle LMS which provided text in PDF document. However, they are more preferred to having a content consist of video. This is because they claim that video-based courses help students some experimental and practical approach during the courses. Thus, they need some technology advance platform or upgraded the Moodle structure to have a wiki, forum and instant messaging for user interaction and efficient content. Socializing ways become more fun and effective in delivering the knowledge and information.

Based on the research by Nowell, (2014), they are focusing on the importance on the participant placed on digital technology with separated for personal and learning tools. Some of the teachers agreed to open one educational facebook for their student to discuss, sharing, question and answer session and send the assignment anytime. The teacher states that they are felt the relationship connection built via social media strengthened their ability to teach a student in the classroom. Indirectly, they are thought that online interactions also permitted the teacher to teach the student of the etiquette of job interviewing and to teach spelling and grammar. This skill is needed other than classroom schedule. Indirectly, the skill of using the technology for example on typing skill, communication skill and problem solving skills is an increase. There is more social media platform which can be a knowledge sharing center like blogs.

**4. Framework:**

Digital literacy has been defined and prepared in widely varying ways in knowledge searching purpose. Based on the research framework, there is three points need to be stress on to achieve my objective. Referring to the title itself "Awareness of digital literacy toward students", thus, students need to focus on the:

#### 4.1 Knowledge performance

In modern era nowadays, knowledge and information been transfer, gain and precise using digital literacy. Digital literacy helps the student to get the knowledge fast and easy by using the advanced technology. The knowledge could be sharing by socializing too not only in classroom method. Knowledge can be practice in anywhere and anytime, for example, improvement in the communication ways, grammar, and creativity by writing in the blogs. Other than that, by using some other social media like facebook, it also can be one of the medium for digital literacy. By doing one account for teaching, teachers, lecturer or student itself, they can shared the knowledge, complete the assignment, and spread the news easy and fast. As we know, today's life is full of gadget and no one has left behind and we supposed to use it wisely.

#### 4.2 Digital technology skills:

Master in digital technology is a must in the 21st century. The advancement of technology for example computer and systems helps the student to improve the digital technology skills. For the genY, the skills to use the technologies are more compared to the genX. That will become a benefit for them. In digital literacy, students need to be talented and familiar with the system they might use. Students can develop their skill by going to the class of ICT of perhaps learning by yourself. As in the real life, kids also having they own Smartphone or tablet. But, many people didn't aware actually that is also the starting point which the skill can be developed. Other than that, communication skill and searching skill also can be improved. By having those skills, students can improve their self and can easily bring forward their self to the organization.

#### 4.3 Technology tools:

Technology nowadays has implemented many tools which can apply for digital literacy. The skills are needed to use the tools appropriately. From the past research, the tool that has been used is iPads, iPods, Smartphone, Web 2.0, podcasting and much more. All those searching tools might help students to explore and making learning more attractive and fun. Many people never realize different technology used will give different benefits. For example, by using Google earth, the student can learn to build a good vocabulary and improve their writing sentences. Other than that, one of the methods for making class and learning fun is by digital storytelling. Based on the research, some teachers stated that student is extra active and feel free to understand learning with the digital tools. As teachers, practicing digital technology as a teaching tool will enhance student commitment and created learning engagement with students. Because of that, the performance of the students is increased rapidly.

Therefore, to be aware of the digital literacy, students must expose and expert with the point which is knowledge performance, technology tools, and digital technology skills.

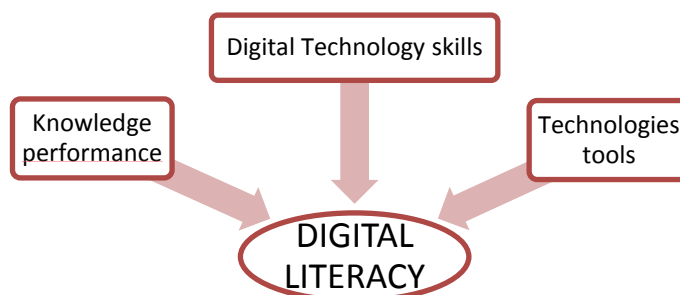


Fig. 6. Digital Literacy Framework

#### 5. Conclusion:

To conclude according to the three point of framework stated, digital literacy are preferred to use for students to apply in the real life for knowledge seeking purpose. Some ideas for classroom-ness are possible since it can be a good impact for the students and a good technologies tool provided. The online

surfing, social media might increase the knowledge practice and build a good strength in terms of communication, delivering a good information and practicing a real information seeking method without boring. From the internet-based task, students can be more active because of the video, animation and sound provided. For example, students can learn the correct pronunciation and learn a new language through online. Moreover, Digital technology also provides good search engines which student can explore, like Google translator, wikis, online dictionaries and more. However, to fully utilize the digital literacy, the student must master the technology skills. Students must put an effort to explore the digital content sites to gain information for a specific purpose. Students need to know the right way to use the technology, such as skills of writing, knowing a little bit about the interface search engine, ways to use the systems and using the social media. Thus, this study has highlighted the on-going and growing concern for students to aware about the digital literacy which can less your burden for knowledge seeking approach and the new technologies learning method.

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