COVID-19: Digital Literacy and Heutagogy Learning Approach in the ODL Environment

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ABSTRACT

COVID-19 has forced us to reshape learning styles and approaches in education geared towards 21st century learning and teaching techniques. The whole world is facing a new global crisis that threatens the advancement of education, which includes pedagogy, assessments, teaching materials, and technologies. All schools and higher learning institutions are required to implement Open Distance Learning (ODL) due to no physical contact during Pandemic Covid-19. Studies have revealed that the most significant barrier to students' digital learning is their lack of digital literacy, as well as their inability to adjust to a new environment as an independent learner when teaching is done remotely via digital platforms or ODL. Not only students, but also educators and parents, are urged by the current scenario to be more creative, cooperative, and adaptable in their approaches. According to research, the use of information is expanding, requiring students to be digitally literate in order to manage information for their academic and personal purposes, independently. As a result, this paper offered a conceptual framework for 21st-century learning that incorporates digital literacy and an independent learning approach known as heutagogy, with the intention that this framework can be extended across educational institutions and provide new opportunities and strategies for teaching and learning in the digital age.

Keywords: *Digital Literacy, Heutagogy, Open Distance Learning, Information, Independent Learning*

1. INTRODUCTION

The transformation of educational approaches is crucial for the entire world society in the twenty-first century. With a new worldwide crisis looming in the first quarter of 2020 in the form of the Covid-19 pandemic, the change must occur more swiftly than anticipated. This new influence in our lives has had a profound effect on education, as well as a variety of other sectors, with students increasingly separated from schools and campuses and struggling to adapt to open and distance learning (ODL). Every country must move fast to continue the learning process and turn these environmental forces into opportunities for future learning to adapt to new pedagogy, technology, assessment, and involvement of all parties, including parents. In Malaysia, the use of online learning has long been introduced and it is relevant during the recent pandemic. It is widely used by schools and especially by university students. During the Covid-19 pandemic, a major increase in online classes has occurred, in which education is done via online media. It forced the closure of educational institutions across the globe in early 2020, hence affecting almost 1.2 billion students [1]. As online learning requires more knowledge of computer abilities than in the classroom [2], this method of learning heutagogy becomes a challenge because it requires digital literacy from both students and educators [3]. The emerging learning styles require a variety of literacies for engaging with information, digital resources, and visual media, along with problem-solving skills, as well as emotional and psychological competencies. [3].

Nowadays, digital technology plays an important role in the world of education [4]. Technology evolution and expansion translate into expanded access to education through devices used to deliver distant and online education. Within education, whether traditional or online instructional delivery, there is a drive to enhance learning outcomes to meet the skills required in the 21st-century workplace [5]. Furthermore, the rapid change of ICT has led to an improvement in the availability of information [6]. As a result, ICT also changed the traditional way of teaching and learning to a new method and experience. It means the new method allows teachers and students to explore more resources in more flexible ways. However, not all teachers and students can utilize all the information provided on ICT. Also, to adopt ICT as an innovative teaching and learning practice, the transformation of the education system also needs to be considered.

In the process of transferring knowledge in teaching from face to face to online, the challenges are related to educators' and students' lack of digital skills, the lack of structured online resources, and lack of interactivity and motivation [7]. It has decreased student readiness to utilize Open Distance Learning (ODL): computer/Internet readiness, self-directed learning readiness, and motivational learning readiness, during this pandemic time [8]. These transformations required students to be more independent and engaged in an Open Distance Learning (ODL) environment due to the closure of higher learning institutions and schools. In order to cope with this new normal situation, students also need to be equipped with digital literacy skills, as most of the learning process uses digital technologies for academic purposes. However, a previous study by [9] found that the growth of ICT creates an abundance of information which makes it difficult for students to separate truth from hoax. Furthermore, students are still lacking digital literacy skills for academic purposes, and this will lead to less motivation to become independent learners. [3]. Therefore, this paper aims to discuss the new learning environment, Open Distance Learning (ODL), in relation to the need for digital literacy skills among students.

1.1 OPEN DISTANCE LEARNING

"Open and Distance Learning" is a concept of open learning and teaching through virtual or online that requires students to be "independent learners ". According to [10], "Open and Distance Learning" is an interactive method between instructors and students in which educational contents and educational instructions are disseminated remotely via computers and the Internet, without the instructors and the students being physically present. Nowadays, especially beginning in the first quarter of 2020, ODL has become a quick answer and solution to the Covid-19 epidemic that it has been hugely enforced and implemented throughout the world across all education systems at primary, secondary and tertiary levels. This is so true and obvious, when the whole world was forced to take immediate 'remedial' measures to enable teaching and learning activities to resume 'as usual' by enhancing the use of digital technologies and materials while educators and students are separated geographically from one another [11].

Nevertheless, adapting to an online teaching system under crisis is the biggest challenge for teaching and learning solutions that can be made by the institutions to help deal with the pandemic [12]. This study found that the obstacles to achieving quality in distance learning during the Covid-19 Pandemic indicated that the professors and students faced self-imposed obstacles, as well as pedagogical, financial, technical, and organizational obstacles. No doubt, despite all the challenges, the utilization of digital technology as teaching and learning tools is still key in the current chaotic environment. However, a greater concern remains, though, and that is how can we approach an epidemic scenario more useful to our teaching and learning goals in the long run? Is it still feasible to use the common teaching and learning methods that are more educator-cantered? Alternatively, is now the right time to have the digital transformation along with the shift from an educator to a learner-cantered style of learning?

In fact, according to [13], technology innovation should be exploited in a way that it will create new chances for educational transformation. [14] underlines how beneficial the digital technologies can be through the enforcement of a heutagogical approach. Web 2.0 design allows students to take an active role in their own education, rather than being passive recipients of information. Using the social media for example, increases their ability to connect with people, find and share knowledge (individually or in a group), and gather information that enables self-directed learning. This is supported by [15] that heutagogic principles provide the educators with the potential to innovate as higher education shifts to an increased reliance on online learning as a result of Covid-19 crisis.

According to [16], to encourage self-regulated and active learning among students, the digital learning environment that is built for them should be flexible, including the provision of visual, verbal, and aural channels for presenting, distributing, and communicating course content. Face-to-face synchronous online classes and well-planned asynchronous learning should be integrated in order to achieve this purpose constructively. [17], emphasize the need for a user-friendly and reliable technology to ensure the successful implementation of the online learning process. In a study that was conducted to identify Malaysian higher learning students' preferences for their convenience in adopting ODL during the Covid-19 period, it was found that the students use a variety of tools [17]. The findings reveal that students' preferences can be ranked as follows: 1) non-campus learning management systems (LMS), i.e., Google Classrooms, Schoology, Edmodo, and Flipgrid; 2) university LMS (i.e., Blackboard and Spectrum); 3) live meeting platforms (i.e., Google Meet, Zoom, Microsoft Team, Cisco Webex); 4) chat applications (i.e., Whatsapp, Telegram, and Email); and 5) social media (i.e., Facebook, Instagram, Twitter). The outcomes of this study can help instructors choose the most effective and convenient platform for students, especially when it comes to encouraging them to become more autonomous learners.

2. HEUTAGOGY LEARNING APPROACH

Covid-19 has reshaped learning styles and approaches in education directed at 21st century learning and teaching techniques. Education with this new norm is transitional as a "push factor" because most higher learning institutions are equipped with digital technology facilities that are able to support a flexible approach from pedagogy to heutagogy. However, for some schools, it is totally new to the practice of ODL. ODL is learning without borders, which requires students to be independent learners or "self-determined learning". Heutagogy is an approach to learning that was established to empower learners to adapt to a rapidly evolving world that is steered by information and knowledge as vital assets of the day. The whole concept by [18], describes the need for learners to connect with their educators, peers, and friends in such heutagogical activities as creating, exploring, collaborating, connecting, reflecting, and sharing for the purpose of learning. In this regard, it is important that they act independently to discover and choose relevant topic for investigation.

One of the big challenges faced by educators is presenting interesting learning for the millennial generation, especially during the Covid-19 pandemic. The most important skill in the 21st century is self-directed learning or independent learning as an outcome of education. Pedagogy, andragogy, and heutagogy are the three forms of learning methods. The first form is pedagogy or teacher learning center, which was introduced in the 19th century [19]. The purpose of this method is to make the teacher a center of resources for students to gain knowledge. The second form is andragogy or student learning center, which was introduced in 1833-1927 [20]. The learning model that is currently being developed is a form of learning that focuses on self-determined learning called heutagogy [21]. This method is different from pedagogy, whereas Andragogy emphasizes adults learning differently than children. Heutagogy requires students to be more independent learners, and the role of the teacher is only as guidance, and students have the freedom to set their own learning experience [3]. In addition, [18] stated that heutagogy is appropriate for the needs of students in the 21st-century, particularly in the development of individual capabilities. The Heutagogy method allows students and teachers to choose, utilize, and gain from many resources of information regarding problems in school [13,21]. Thus, competent teachers are mentors who possess the heutagogy proficiencies to successfully traverse the contemporary society, both for teaching and educating the students they serve including to participate in fruitful dialogues with students as well as their colleagues.

The pedagogical approach in the context of the roles entrusted to educators is more conveniently associated with the conventional ways of knowledge delivery. In contrast, the roles of educators in deploying an andragogical approach are deemed more relevant to the demands of the modern era, particularly in making learners become more self-directed. Learners' capabilities are built in the manner that they are able to link prior experiences with the newly acquired information and to pay attention to resolving real problems [22]. As [23] stated, Figure 1 shows the features of heutagogy as a continuum of andragogy as follows:

2.1 Learner Agency

Human agency, or the capability to choose one's own life decisions, is an underlying principle of heutagogy, in which the learner acts as an agent of his or her own learning. In a heutagogical setting, students

have complete control over the learning process, deciding what and how they will learn and eventually evaluating the extent to which their learning has been successful [18], as cited in [23].

2.2 Capability

The goal of heutagogy is to develop capable students who are well prepared to tackle the challenges of multifaceted work situations. Heutagogy appears to take student learning a step further by emphasizing the development and expansion of competences, as well as providing students with autonomy over their learning. This full engagement in the learning process improves learners' motivation, which consequently results in capability development. Capability is then derived from a feeling of self-efficacy, in which students are confident in dealing with and succeeding in new and unusual circumstances and scenarios.

2.3 Self-reflection and metacognition (double-loop learning)

Double-loop learning is another essential facet of heutagogy. Learners encounter and alter their values and beliefs, judging and deciding based on information. Through this, self-reflection on learning is achieved by which individual learners deliberate on what they have managed to learn and how the knowledge has been acquired. Self-reflection transpires at an individual level when 'the learner links his or her prior experience to the newly obtained skill and knowledge from the standpoint of values to be applied actively and meaningfully with novel methods.' [18].

2.4 Non-Linear teaching and learning

Heutagogy also stresses on non-linear design and learning method, an attribute that connects smoothly the web design defined by a construct of hypertext topics and hyperlinks. [18,3].

Figure 1 *Principles of Heutagogy (adopted Blaschke, 2016).*

3. DIGITAL LITERACY SKILLS

For the heutagogy design to perform well, it is also vital to emphasize (24), a collaborative approach involving librarians and educators. This collaboration is a platform for both parties to engage as a team in directing students adequately in what is termed a guided-inquiry approach meant to boost 21st century learning. In addition to her point, elements of digital literacy skills from the information science field should be embedded in education. [3].

Self-awareness in recognizing the requirement of acquiring digital literacy in such a manner that they would be able to locate, evaluate, and utilize digital information ethically, effectively and efficiently. Digital literacy skills can be defined as "the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills" by the ALA Digital Literacy Taskforce, (2011). Digital literacy skills are a must for the ODL as supported by the European Commission's Digital Education Action Plan (European Commission, 2018) digital competence development in education, noting that "Digital technology enriches learning in a variety of ways and offers learning opportunities which must be accessible to all". Digital literacy is one of the competencies in the education field that opens up access to a wealth of information and resources among students. The components of digital competencies are:

a) Data and Information literacy: Able to identify, locate, access, retrieve, store and evaluate data into meaningful information.

b) Content and knowledge creation: Able to create new knowledge through technology and media content and disseminate through online and solve a problem

c) Communication and collaboration: Able to share, communicate and collaborate through online tools, engage and participate in citizenship, and interact with others responsibility

d) Privacy and Safety: Able to use, protect data and information responsibly by taking into consideration privacy, safety and netiquette of social well-being and environment

These components are consistent with the Calvani model of digital literacy (2010) that proposes an integral assessment for these new competencies, involving the technological, cognitive, and ethical aspects of digital literacy. In terms of technology, students should be

competent in technical skills in various forms of using digital technologies and applications. For cognitive, students should develop analytical thinking, innovation, and creativity to facilitate the ODL and should be responsible for communicating and collaborating using ICT ethically. In addition, a recent study by [8] related to student readiness in Open Distance Learning (ODL) shows that motivational learning readiness is needed as learning support during a pandemic outbreak. These factors were considered as crucial as, in order to be an independent learner, the student's behavior should cover the elements of human skills such as flexibility, ability to deal with complex problems, emotional intelligence, and social influence, as shown in Figure 2 below.

Figure 2 *Components of Digital Literacy Skills.*

Studies have found that digital literacy needs to be taught in school or any educational institution to help students improve their capabilities, to know how to study, and to create continuing lifelong learning. Digital literacy includes the ability to find and use information (otherwise known as information literacy), but goes beyond this to encompass communication, collaboration, and teamwork, social awareness in the digital environment, understanding of e-safety, and the creation of new information.

Both digital and information literacy are of paramount importance in learning, teaching, and research, and are essential skills for students and staff. Digital literacy is the ability of individuals to access information and methods of communication through technological tools, including, but not limited to, smartphones, tablets, laptops, and PCs.

4. DISCUSSION AND CONCLUSION

The importance of digital literacy skills should be emphasized not only to respond to the Covid-19 crisis, but also due to technological advances. The use of the Internet among students to be more independent in the ODL environment and for preparation for the requirements of the field of employment in the future. Skills for preparation for Industry 4.0 need to be developed at an early stage of the learning process to produce students holistically. Students who develop digital literacy as an integral part of their learning are more effective in their studies and more employable after graduation. (UK, HEI Academy, 2018).

The issues and challenges of ODL show the influences on the relationship between heutagogy and digital literacy. Digital literacy is one of many 'new literacies' essential for fulfilment of information gap in facilitating ODL, so, the need to integrate it into the heutagogy approach seems justifiable to consider. Students are empowered to manage and control their own learning by themselves, with the support of educators to offer guidance and strategies. In this context, three main domains by Baartman et al. (2011): Knowledge, Skills, and Attitude; the digital competencies by Calvani et al. (2010): Cognitive, Technology, and Ethics; and the heutagogy approach by Hase & Blaske (2015) were proposed as a conceptual framework that determined ODL.

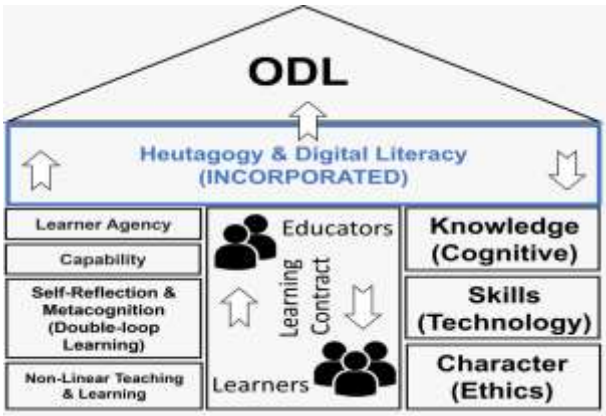

Figure 3 *Incorporated Digital Literacy & Heutagogy in ODL Environment.*

Figure 3 explains the following for students: application of cognitive skills (Know What), technology skills (Know How) and the right attitude (Know Why) during the ODL process. Meanwhile, from a holistic standpoint, heutagogy can be adopted for the entire institution as an educational framework, thereby offering proper ODL settings for educators and learners that are to enable growth in mindset and greater depth of learning.

It is hoped that the government, in collaboration with educational institutions, has taken steps and initiatives to ensure that the policies and procedures of ODL in this new norm are carried out effectively and efficiently. Today's core challenges in schools and universities are not only determining what skills and knowledge should be taught and learned in the curriculum, but also specifying the appropriate learning approaches that are situation-sensitive or condition-driven in order to create future generations on which a nation can rely to gain a sustainable competitive edge on the global stage.

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