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Educational Technology Applied to Adult Education

José Luis Arias Gonzáles
University of British Columbia, Canada

Bryan Sebastián Alfaro Castillo
Universidad de Atacama, Chile

Mario José Vasquez Pauca
Universidad Tecnológica del Perú, Peru

Milagros del Rosario Cáceres Chávez
Sinfonía por el Perú, Peru

***Abstract*---**Adult learning has been ubiquitous not only in the institutions of higher learning but in the lower learning institutions. As shown by many authors, adult learners often bring with them a high level of experience and higher expectations that positively reflect their performance in their classroom-based activity. This study is done explicitly on educational technology applied in adult learning to enhance the learning activities and increase the level of enrollment in adult learners. Also, the study brings to light how significant technological advancement in education is to adult learners since a higher percentage of students are busy people with different sets of commitments. The study suggests that faculty members' attitudes toward instructional technology, particularly those geared at adults, need to be re-evaluated to serve their students better. Instructors need to think about how technology might affect the development and use of andragogy in the classroom to help adult learners.

***Keywords*---**adult learners, educational technology, higher education, learning, technology.

Introduction

The number of students going for higher learning in the United States is increasing every year, including both students from within and outside the country. From 2009, the higher learning institutions have recorded over 40% to

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***Corresponding author**: Gonzáles, J. L. A.; Email: Josearíasgon6@gmail.com*
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45% increased enrollment of adult learners aged 26 years and above. As shown in the study by Bond et al. (2020), technology in adult education and training comes with some difficulties. Although technology is essential, the greatest challenge is to keep the learner, and their progress at the centre of attention as Bartolomé et al. (2018), argues that technology encourages a tool-first approach. Still, our knowledge of utilising it for learning is only as good as our understanding of how to use it. She has made an excellent point when it comes to education and training for adults in the 21st century. Having a full-time job and raising a family are everyday tasks for adult learners. On weekends or at the end of the week, adult learners may find it difficult to attend face-to-face sessions in typical classrooms on a physical campus. By transferring their courses to the computer screen, universities and colleges have taken advantage of this excellent opportunity to serve better adult learners' requirements (Cosculluela, 2018). In the early 1970s, Knowles, the founder of adult education, prophesied that instruction would be given electronically in the 21st century, especially for adults. Using WebCT or Blackboard systems, universities and colleges began to address the needs of adult learners (Hew et al., 2019). During the late 1990s, some educational resources were purchased. These include various reasons for adult learners to enroll in online courses, including improving their job skills, gaining a college degree or other qualifications, or just for the sheer love of learning itself. Adult learners' educational demands are being met by enormous online colleges, such as the University of Phoenix, which have launched massive online educational programs.

According to Housel (2022), in 2002, the Apollo Group's University of Phoenix surpassed 100,000 students in enrolment, making it the largest university in the United States. Even if universities and colleges are forced to accomplish more with less, this enrolment might be considerably more significant than it already is. Budgets are being slashed as the number of students is set to rise. Is it really up to professors if they appreciate using technology in the classroom? No, it isn't. Faculty can no longer claim that they are philosophically opposed to using technology in the classroom. Teachers currently have to embrace the most significant change in their lives to include at least some technology into their teaching (Huang et al., 2019). A third of a university's courses are now available online, which is no surprise. In the new millennium, technology in the classroom has become a new trend.

These days, as shown in the study by Khaddage et al. (2016), no college professor can escape mixing electronic and in-person communication in their instruction. It's only a matter of time until electronic communication becomes an integral part of the curriculum. Over 100 adult learners are enrolled in four distinct online or hybrid classes taught by various teachers and lecturers around the country. Thus, to claim that face-to-face education with adult learners will be marginalized by Internet technology is not what I am saying here. Technology-enhanced learning, rather than traditional teaching in university settings, seems to approach learning as a commodity, turning it into an external object that can be sold at a high price to rescue cash-strapped programs. Perhaps pragmatism comes into play here. When technology is used for learning, it is also used for teaching. Even in the 1960s, behaviourists began promoting computer-aided training. Concerns regarding the lack of a human factor in teaching with

technology are expressed by faculty members in the classroom (Kamisli & Özonur, 2017). Instructors need to think about how technology can improve the learning experience and outcomes for adult learners. Teachers in higher education may be able to experiment with new approaches to teaching and learning due to the possible impact of technology on educational design and execution.

Material and Method

For this study, I did journal reviews for articles and dissertations from Google Scholar, Jstor, IGI Global and Academic Search Premier. These searches were primarily conducted with a few conditions. First, the journal articles used had to be published in English, and the publication period had to be between 2009 to 2020 for both database and supplementary searches.

Boolean operators were used to connect phrases like "adult learner," "adult education," "adult student," "college," and "university" in a preliminary literature review on adult learning in higher education settings. Faculty in higher education settings used technology tools as part of our study and their functions within that context were examined as part of our investigation andragogy, technology, pedagogy and adult education were used as keywords in a search for approaches and practices for closing the gap between adult learners and faculty technology use (Tondeur, et al., 2016).

For inclusion and exclusion, the date of publication was the most important factor. However, there were a few exceptions to the guideline of only evaluating publications published after 2009. Adult education technology trends now and their evolution through time should be the subject of our discussion on this particular day and time. For inclusion in the review, only papers published in peer-reviewed journals were considered, except for the section on social media debut dates.

Results and Discussion

Students who identify themselves as adult learners are an essential part of discussing the current state of instructional practice in colleges and universities. This section will look at what the research says regarding adult students in postsecondary institutions.

Challenges in assigning definition to adult leaners

Adult learners are a complex group to pin down since there are so few characteristics shared by the various studies that attempt to define them. Questions arise about whether or not the term "adult" refers to a learner's maturity in terms of their mental, cultural, or educational maturity or if their age is the main requirement for consideration. As Kuo & Belland (2016), stated, to help adult learners succeed, educators must have a clear picture of what they are up against while working with them in educational settings.

Some of the common in are adult learners is where students who are 25 years and above or those who do not fit the typical definition of a college student are

commonly referred to as adult learners this definition was cited by (Lewin & Lundie, 2016; Mubayrik, 2018, Mangal & Mangal, 2019). Indeed, the term "adult learning" has traditionally been used to refer to students who are not considered regular college students. Students who are described as "non-traditional" tend to fall into several categories, such as those who are older than 25, have dependents, are single parents, are working part-time or full-time, are financially independent, are enrolled in part-time jobs, do not have a high school diploma, or possess life or career experience (Lewin & Lundie, 2016; Mubayrik, 2018).

What was formerly referred to as "non-traditional" is increasingly becoming the "new normal," and many institutions of higher education are ill-equipped to meet the needs and interests of students who fall into this demographic category (Mubayrik, 2018, Mangal & Mangal, 2019). Students who aren't enrolled in a traditional college setting have been referred to as "adult learners" throughout the literature. According to Mubayrik (2018), further studies and reviews are required to fill the vacuum in the literature about the reasons why all adult students who meet this condition are still classed as non-traditional.

In addition, it is also essential to consider the implications of the traits of adult learning. In the study done by Reeves & Oh (2017), to improve their critical thinking abilities, which are highly valued in higher education settings, adult learners must be allowed to draw on the breadth of their life experience. Also, adults are supposed to have matured intellectually and socially, possessing their notion and experience of life and formal or informal education. Each of them has a unique job to play in the community. Thus, they must be regarded like adults (Zhu et al., 2020).

As Sweller (2020), argues, teachers should be conscious of the fact that their present learning experiences should match their students'; orientation in terms of professional development should be on faculty learning rather than teaching. There are also well-established preferences for adults' preferred learning techniques, according to (Kuo & Belland, 2016). As a result, teachers must be able to accommodate students' differing learning styles. For instructional techniques to be effective, professors must be aware of the views of adult students about certain teaching approaches, according to research by Housel (2022), on the methods employed in law schools.

Technology and education

The 21st century especially 2019, has led to a remarkable development of e-learning platforms due to COVID-19 restriction protocols. Worldwide lockdown led to implementations of e-learning not only in higher education but also in lower levels. E-learning in higher education has the potential to expand both the number and the quality of educational alternatives available to college students. If e-learning is introduced in higher education, students will have simpler and more convenient access to the educational process. Free access is currently being offered by a number of educational technology and online tutoring companies, including BYJU'S, a Bangalore-based educational technology and online tutoring firm founded in 2011. New students have increased by 200 percent as a result of

the company's Think and Learn app, according to BYJU Chief Operating Officer Mrinal Mohit (Mseleku, 2020).

Meanwhile, the Chinese government has ordered a quarter of a billion full-time students to resume their studies online using Tencent classroom, which has been extensively embraced since mid-February. Around 730,000 K-12 students, or 81%, use the Tencent K-12 Online School in Wuhan, making it the greatest "online migration in education history" (Amarneh et al., 2021). For instructors and students, one-stop shops are being developed by other businesses as well During ByteDance's rapid expansion, the company designed Lark as an internal tool to provide professors and students with limitless video conference time, together with auto-translation, real time editing, and smart calendar scheduling (Sharin, 2021). Lark upgraded its worldwide server infrastructure and technical skills quickly and at a time of crisis in order to provide reliable connection.

Zhu et al. (2020), reported that the number of students enrolled in distant education programs or courses started increasing from 2000 to 2008. A higher percentage of increased online learning enrollment was noticed from 2019. Eight percent to twenty percent of undergraduates took at least one e-learning course. At the same time, the percentage of students enrolled in a degree program taught solely via distance education doubled. A 2010 poll by the Instructional Technology Council found that e-learning positively influenced community college students. Those findings showed that online learning was on the rise, with enrollments at participating institutions rising by 22% in 2010 and 2019, 2.9% of schools started to offer half of their courses online. 57% of students were equipped with online learning tools in the US.

Conclusion

In recent decades, technology has advanced swiftly, and today's students, especially those labelled "digital natives," are more likely than ever to use it (Amarneh et al., 2021). Higher education institutions are beginning to receive students who started their education as digital natives. According to the research, many of these institutions are not adequately prepared to fulfil students' experiences, needs, and aspirations. Many administrators of higher education institutions may see this shift in educational demands as difficult, if not impossible. Still, others will see it as an opportunity to incorporate technology into educational design in new and creative ways and make necessary adjustments to how students are taught and learned in the process (Bond et al., 2020).

Many professors have already begun integrating technology into the classroom, and they are reaping the benefits (Bond et al., 2020; Lewin & Lundie 2016; Cosculluela, 2018; Mubayrik, 2018; Mangal & Mangal, 2019). However, it rarely occurs at the same rate as new technological advancements. Another issue is that many educators replace old technologies with new ones, completely excluding the possibility that e-learning technologies can revolutionize learning (Cosculluela, 2018). It can profoundly affect the connections and interactions between students and teachers and student learning outcomes.

According to the literature on the subject matter, colleges and universities are ideally positioned to examine the influence and value of andragogy on adult learning communities. Adult learners prefer self-direction, relevance, and the potential to form a community of like-minded learners, and online learning can help foster these aspects of learning. Some argue that not all students in higher education will benefit from pedagogical methods (Kamisli & Özonur, 2017). There is also the concern that many educators may misapply the underlying concepts of andragogy because they are unwilling or unable to deal with the challenges presented by pedagogical teaching approaches. And pedagogically-based learning is supported by research, but it has to be widely implemented and tested to discover the specific benefits and challenges.

Online socializing is a natural extension of the lives of the digital generation. To counteract the inherent isolation of online learning, online interaction and education can be used to create a learning environment that is more social and collaborative than traditional learning methods (Khaddage et al., 2016). A new generation of learners may now connect and cooperate with other learners, instructors, or even professionals and leverage these communities' collective intellect and mentoring potential (Amarneh et al., 2021). A more balanced approach that considers pedagogy, technological advancements, and curriculum must be adopted by instructors to make use of these educational opportunities.

Several new models are already looking at ways to implement a more balanced approach across institutions of higher learning. The TPACK model is an example of a proposed model that fosters "interaction with the rich concerns of pedagogy, technology, and content and their inter-relationships seeking to construct new ways of looking at the world and new approaches to employing technology to develop innovative pedagogical solutions" (Bond et al., 2020). There has to be more research on this and other methods of balancing technology, education, and content in instructional design.

A systematic model of deliberate technological integration with instruction has been found to be beneficial in higher education, according to research. Academic institutions are in risk of becoming irrelevant to those they are meant to serve: their pupils. Students from future generations may expect dynamic technological integration in their higher education curriculum when they enter these institutions.

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