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OPTIMAL LEARNING USING TECHNOLOGY: AMPLIFYING STUDENTS COLLABORATION AND SOCIAL NETWORKING

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Abstract

Technology for learning has great potential in enhancing social networking and collaboration opportunities among students. Implementing technology into learning environments has been known to increase students' academic experiences and learning outcomes. However, evidence remains unclear when it comes to showing that students have learned while using technology. Learning with technology can increase personal well-being. The Well-being Theory and PERMA model will be used as the theoretical framework to show how optimal learning with technology can improve students' outcomes and contribute to multidimensional well-being components. This is not only true for young students, as older individuals' partake in academia and use technology to increase their learning experiences. The research was based on previous literature on learning with technology and how to enhance personal well-being. Findings revealed that learning with technology does strengthen teaching and learning experiences. It also contributes to positive attitudes toward learning with

technology when students and teachers are provided with adequate training. It will provide information related to how learning with technology influences collaboration and fosters social networking. Finally, the conclusion will be based on the rationale for using technology for learning and its contribution to personal well-being. Future research recommendations and limitations are addressed.

Keywords

Optimal Learning, Collaboration, Social Networking, Well-being

1. Introduction

Personal well-being is essential to everyday life and for individuals of all age groups, professions, and academic backgrounds. Most people strive to ascertain a certain level of happiness and well-being while engaging in activities that present low costs and barriers. With age, senior adults are not frequently present in academic settings as young cohorts, but this does not stop their desirability of engaging in structured learning and effective communication practices. Aging adults face cognitive and physical debilitations, but constructive use of digital and mobile technologies for continued education and communication can increase their overall well-being and health. Seligman's (2011) Well-being Theory, i.e., Happiness or PERMA (positive emotions (P), engagement (E), relationships (R), meaning (M), and achievement (A)) posits that these are crucial elements that can be fundamentally applied into everyday life happenings and happenstances. The application of these multidimensional elements can substantially and strategically increase overall well-being and flourishing.

Moreover, increased well-being could be personified to aging adults, those 65+, and learning and communicating with technology. Senior populations are more vulnerable and susceptible to face mental degradations and physical frailties, limiting their mobility (Nguyen, Hunsaker, & Hargittal, 2020). Age-related factors are also known to diminish cognitive capacities, as some senior adults cannot learn and store large amounts of information to the same degree as younger cohorts.

1.1 Setting the PERMA Model

Using the PERMA model as a theoretical framework can shift learning, communication, collaboration, and social networking paradigms, namely where mobile learning and communicating infrastructures, more specifically smartphone technologies, are concerned. Recent studies (i.e., Schmuck, Karsay, Matthes, & Stevic, 2019; Stevic, Schmuck, Matthes, & Karsay, 2021) have shown

how smartphone usage and mobile technologies influence personal well-being coupled with diminishing feelings of loneliness, boredom, and isolation. Furthermore, when it comes to learning or learning with technology, Lai et al. (2018) found that implementing multi-variables related to the PERMA-H (H being *health*) in academia can increase students' academic experiences and social engagements while reducing stress and anxiety associated with learning. Furthermore, proper digital literacy teachings, training, and support of digital apparatuses and software can increase the attractiveness of mobile technologies for students and teachers, thus increasing student-teacher dyadic relationships, social presence, and retention rates among students and teachers (Pearce, 2020a; Ratheeswari, 2018). Intentional and constructive use can also improve collaboration and social networking potential to develop positive, long-lasting, and trusting relationships (Al-Harrasi & Al-Badi, 2014). For senior adults, when technology usage is accompanied by social support, digital literacy, freedom of control, and all-inclusive hardware and software designs, it constructs perceived ease of use and perceived usefulness attitudes (Blok, van Ingen, de Boer, & Slootman, 2020). This is also the case for learning, communicating, collaborating, and socializing oneself.



Figure 1: *The PERMA Model (Seligman, 2011)*

This image represents Martin Seligman's (2011) Well-Being Theory, the PERMA model, which comprises the five pillars of increased well-being. These elements include positive emotions (P), engagements (E), relationships (R), meaning (M), and achievement (A). This conceptual framework will guide this research. It examines optimal learning using technology through the

PERMA lens and how such technology-based engagements can not only promote quality learning, collaboration, and socialization but contributes to various aspects of personal well-being.

2. Theoretical Foundation and Model

Seligman, the father of positive psychology, developed the nonage-specific PERMA model to illustrate how individuals strive for increased well-being and happiness. According to Seligman (2018), PERMA modalities are building blocks to maintaining and sustaining well-being and flourishing. The PERMA model can be applied to life, independently or collectively, personally, academically, and professionally. Happiness means being optimistic and understanding oneself and their achievements. Feeling good, living a pleasant, meaningful, and a good life are associated with increased well-being (TED, 2008). The PERMA model has been applied to various life genres, one being education. The Brainwaves Video Anthology (2017) (Martin Seligman as the speaker) found that these multidimensional approaches can be used to increase and understand students' well-being. In a study conducted by Lai et al. (2018), using the Assessment Program for Affective and Social Outcome (2nd version) (APASO-II) psychometric tool to examine four elements: *positive engagement, positive relationships, positive purpose, and positive accomplishment* of the PERMA-H model, they found that when various well-being dimensions were applied into teaching and academic experiences it increased academic engagements while reducing stress and anxiety associated with learning. This approach is not necessarily restricted to K-12 or solely learning, communicating, collaborating, and social networking with technology. People of all age groups use multifunctional and multifaceted digitized and mobile technologies, e.g., smartphones, for various reasons. Researchers have found that senior adults are the least likely to use mobile technologies, namely smartphones, due to age-related frailties and limitations (Yazdani-Darki, Rahemi, Adib-Hajbaghery, & Izadi-Avanji, 2020).

Using the PERMA approach to understand well-being in learning, communicating, collaborating, and social networking with technology is a nomological structure that could significantly add value to learners of all ages, cultural backgrounds, races, socioeconomic statuses, personalities, and learning styles. The PERMA model focuses on the positive affective of life, experiences, and interactions. Sustaining a positive and cheerful disposition or mindset while nurturing healthy connections could increase well-being (Seligman, 2011). This could be

accomplished through mobile learning and personal interactions among senior adults within or external academic settings.

3. Technological Platforms in Support of the Theoretical Model

Mobile technology platforms and infrastructures continue to thrive and exhibit a dominating and ubiquitous presence in societies. Many seniors' receptivity to mobile technology usage and adoption into everyday life lies on the surface of cognitive capacities and freedom of movement or optimal functioning. Moreover, persons who lack digital literacy training and education, low or fixed income, and no social support are less likely to purchase, adopt, and adapt new and emerging technologies into their daily lifestyles (Yazdani-Darki et al., 2020). Supporting this notion, Mitzner et al. (2019) speculate that geriatric persons' with low crystallized intelligence, low academic and socioeconomic status, and distrustful or antagonistic attitudes toward technology are less likely to use and adopt intelligent technologies. Moreover, when seniors experience computer anxiety, discomfort, and uncertainty, this dampens the chances of adopting and using technology short-term and long-term (Mitzner et al., 2019). Academically, when students and teachers are not provided with adequate training in technologies for the purposes of learning, communicating, collaborating, and socializing, it can lead to teachers and student's uncomfortableness in use, leaving them feeling incompetent and dearth in their abilities of learning, teaching, and communicating with the devices they have been provided (Ghavifekr, Kunjappan, Ramasamy, & Anthony, 2016). Moreover, lack of support and uncertainty can decrease teacher's retention rates (Ellen, 2020). Nonetheless, providing proper instructions on using technology for academia improves learning experiences, collaborative opportunities, socialization, and networking among students, teachers, and other stakeholders (Ghavifekr et al., 2016; Ratheeswari, 2018). In essence, it increases stakeholders' well-being.

Using mobile technologies for learning and communicating, those being smartphones, tablets, and laptops, afford individuals the option to modify the context in which they learn, given that stable broadband and internet connections are available. Learning, communicating, collaborating, and social networking with technologies, irrespective of age and other demographics, provide the opportunity to increase knowledge and intellect. Access to physical materials and resources (Pearce, 2020b; van Deursen & van Dijk, 2019) is paramount to mobile learning. Having access to resources and materials adds value to well-being elements, e.g., positive emotions, engagement, relationships, meaning, and achievement (Health and Vitality) can live a happy, healthy (physically and mentally), and satisfying

life. Necessary resources also provide them with the wherewithal to sustain a certain level of happiness and positive outlook in life, whether technology is concerned or not.

4. Research and Methodology on Optimal Learning with Technology Platforms

Optimal learning is centered around all-inclusive student-centered learning environments. This means that all students receive equal resources, attention, engagement, and collaborative opportunities for increased socialization, academic achievement, and personal growth while simultaneously increasing their emotional well-being. Yil-Jyrä (2014) suggested that the emergence of optimal learning is based on the state of flow. Finding flow is a mental state that increases engagement and strikes a subjective balance, setting clear goals and receiving constructive feedback (Yil-Jyrä, 2014). The PERMA model is independent elements that aesthetically complement one another. Having a state of flow can lead to increased positive emotions, relationships, meaningfulness, and senses of increased achievement.

Mobile technology learning platforms have sustained a dominant presence in student-teacher institutions and student-centered learning environments. Many students transport smartphones, tablets, and laptops to and from class daily. They use their devices in selected contexts to engage in online and face-to-face instructions, communicate, interact with other students and teachers, and complete assignments. Many students aspire to have an optimal learning experience, as technology has become a driving force in societies and academia. The implementation of mobile technology platforms has removed mobility restrictions and geographic constraints. Communicating and learning with technology offers significant benefits of staying connected, increased social presence, and intensifying learning experiences (Ghavifekr et al., 2016), leading to optimal learning and increased well-being. This does not mean that all persons have access to technology infrastructures. Impoverished and underserved communities continually face digital inequalities and inaccessibility to fruitful opportunities garnered when using technology for learning and communicating (Ghavifekr et al., 2016; Pearce, 2020b) and for increased well-being. Those who are provided with technical necessities and proper training possess tremendous potential to show evidentiary support of learning through information communication technology (ICTs) types of machinery.

4.1. Roles of Collaboration using Mobile Smartphone Technologies

In 2009, Caballé, Xhafa, and Barolli studied mobile technologies and their potentiality for collaboration while technology implementation into classrooms was still in its infancy (Caballé et al.,

2009). These researchers, i.e., Caballé et al. (2009), found that mobile technologies offer numerous opportunities for student-student and student-teacher collaborations, those that go beyond traditional instructor-student and student-centered academic contextualization. Because mobile technologies remain ubiquitous and pervasive in academia, personal involvements, professional engagements, and endeavors, presently, it has shifted the educational and training paradigms. Academia and professional organizations use customizable technologies to increase student's and employee's knowledge, skills, and abilities to operate and function accordingly. Mobile Lecture Interactions (M.L.I) are tools used to scaffold collaboration among students and teachers, which will help in demonstrating distinct and succinct understandings of knowledge (Järvelä, Näykki, Laru, & Luokkanen, 2007). Using smartphones effortfully supports intrinsic and extrinsic collaborative opportunity and community building (Järvelä et al., 2007). It preordained that smartphones are pocket-sized computers that can perform some of the same functions as sedentary or stationary devices. Using smartphones for the basis of collaboration increases prospects of partnerships and fosters chances of social networking and joint problem-solving (Al-Harrasi & Al-Badi, 2014). Also, it could harvest short-term and long-term relationships, internal and external academic settings. Moreover, constructing positive relationships through smartphone technology use and social networking engagements helps increase all parties' personal well-being, namely those associated with PERMA.

For senior adults, collaboration is not as profoundly warranted as social networking and building community. Senior adults can develop an increased sense of well-being when they intentionally and purposefully use smartphones for social networking. It is inevitable that with aging comes physical immobilization and cognitive frailties. Some individuals look for ways to increase their social networking even when they cannot move freely or without assistance. Merely having the needed social support regarding smartphone technology usage contributes to life satisfaction, happiness, and life longevity.

5. Analysis: Fostering Social Networking

Smartphones themselves foster social networking, as many social networking applications are explicitly designed for mobile smartphone technologies. Not only that, but the transportability of smartphones provides permanent connectivity and internet access to users wherever Wi-Fi or broadband services are available. Wireless and mobile tools, such as smartphones, increases social

networking opportunities that bridge different contextual interactions in academia and personal context. It also offers both collaboration and socialization where second language acquisition is necessary, as some foreign or international students engage in Americanized or English-language-based pedagogical approaches (Kukulska-Hulme & Viberg, 2017). Dismissal of technology for English as a second language (ESL) can discourage students, thus reducing the level of participation and collaboration (Miura, 2020) and mitigate academic satisfaction and well-being. Doing this aid in increased multidimensional aspects of the PERMA model itself and fosters potential long-lasting relationships between students, those foreign and native. Wireless communication is not going out of style anytime soon. They will continue to act as mediators and moderators of personal relationships, positive emotions, mental engagements, and increasing the potential for happiness and life satisfaction. They will continue to be used as a primary source for online self-disclosure (Karsay, Schmuck, Matthes, & Stevic, 2021). Using mobile-based technology platforms and infrastructures methodologically and strategically, whereas socializing oneself and collaborating with others to increase social enrichment, produces excellent benefits (Pearce, 2020a), mainly where digital inclusion and equity are concerned (Pearce, 202b). Using mobile and smartphone platforms has been validated as a tool to decrease senses of loneliness, abandonment, and isolation while systematically increasing feelings of belongingness and connectedness for users of all ages (Karsay et al., 2019; Pearce, 2020a; Pearce, 2020b).

Feelings of belongingness and connectedness are essential to aging populations and students. They are also preliminaries in increasing well-being from all life angles. According to Gikas and Grant (2013), students learning with mobile platforms increases methods in which they network and collaborate with others. On the flip side, evidence showed that some student smartphone users felt digital and communication-based apparatuses blurred the lines between social networking sites for learning, communicating, and collaborating (Gikas & Grant, 2013). This suggests that some students have strategically separated the two, adopting social networking sites for personal socialization and social wealth, but not necessarily for academic engagement and learning. When mobile technologies are introduced into education, it not only aesthetically contributes to collaborative opportunities for student-student and teacher-student interactions and dyadic relationships; but can elicit unnecessary annoyances and frustrations as training of the learning platform may be limited (Gikas & Grant, 2013). The fostering of social networking using mobile-based technology platforms removed geographical constraints, opening doors for social networking diversification. It also fosters an

understanding of the people's languages and learning approaches from other countries and worldwide (Benini, 2014; Kukulska-Hulme & Viberg, 2017). Most importantly, learning with ICT platforms can substantially increase learning methods, but evidence of learning may remain unclear in some cases.

6. Findings

Producing evidence that students have learned while using ICTs in classroom settings can present complexities and ambiguities. Yil-Jyrä (2014) posits that students' grades are not sole predictors of optimal learning. Proof that one increased their intellect and understanding using ICT is utilitarian and dependent on teaching and learning techniques. Benini (2014) found that even though ICTs have become an essential part of academia, they cannot be a predeterminant of whether students will learn or not. Evidence showing how ICTs are instrumental to students' learning contributes to their thinking, behaviors, and application of acquired knowledge (Cox & Marshall, 2007). Accounting for the limitations of using ICTs for education and communication is inevitable, as technical issues or errors are bound to occur. Inappropriate training, lack of digital literacy and comfortability, and inhabiting the confidence to navigate different screens and menus must also be considered (Benini, 2014). Implementing technology for learning, communication, and increased well-being takes time and effort. Time constraints reduce student's and teacher's preparedness, diminishing the opportunity to get the most out of the experiences (Benini, 2014). The learning of ICT platforms plays a critical role in optimal learning experiences. However, many students can and still do learn just as well without the assistance of ICTs, while comparatively, other students are left choiceless.

Senior adult's usage of intelligent technologies for learning, communicating, collaborating, and social networking to optimally increase learning experiences and well-being is based on their digital literacy, attitudes towards technology, perceived ease of use and usefulness, and using all-inclusive platforms (Blok et al., 2020). Most senior adults have increased well-being, those related to the constructs of PERMA. A generous portion of senior adults 65+ do not use smartphones or other mobile technologies, yet they still have increased life satisfaction, optimistic dispositions, and happiness.

Examinations of evidence-based learning with ICTs and other technology-based learning platforms, the evidence is not always clear. Hood et al. (2020) unearthed potentialities that how a person feels during assessment can influence their results. In a sense, moods, test anxiety, or feeling

sickly can lead to inefficient performances and decision-making (Hood et al., 2020). Moreover, many students engage in online learning or use some form of technology or technically based pedagogy for learning, communicating, and collaborating (Pearce, 2020b). When teachers and students are provided with proper technology training, it increases their effectiveness and efficiency during usage. It also increases their level of engagement and student-teacher dyadic relationships, and opportunities for collaboration and socialization. With this, there is excellent potential to produce evidence of how students have learned using ICTs without simply getting good grades. After all, optimal learning is centered around establishing and sustaining a positive state of flow, positive emotions, meaningfulness, and positive relationships.

7. Conclusion

Seligman's PERMA model has been applied in various life genres. People strive for happiness and quality of life while systematically and strategically taking the necessary courses of action to diminish costs and barriers associated with reaching desired well-being. Findings suggest that not only has digital technologies for learning and communicating become a necessity (Xie et al., 2020), but it has become the primary source to socialize oneself and a significant source for collaboration, namely in a coronavirus-laden or COVID-19 world. PERMA is applicable to life situations, whether academically, professionally, and personally. Everyone has a desire to be happy and become their best self. Coherently and intentionally implementing and adopting PERMA can amplify overall well-being, eudaimonically and hedonically. Learning, communicating, collaborating, and social networking with digitized and innovative technologies removes barriers linked to physical and cognitive frailties and hearing and vision impairments associated with disabilities and aging. Mobile learning, communication, collaborative, and social networking infrastructures afford individuals the opportunities to willfully and intentionally change academic engagement and socialization dynamics contextually. Applying the PERMA model of the Well-Being and Happiness Theory to learning, teaching, and communicating can increase the quality of dyadic relationships and contribute to optimal learning and well-being for learners and teachers. Still, these elements can improve for all stakeholders. Future research should conduct quantifiable analysis or qualitative investigations to show how learning with technology influences all students' personal well-being among all grade levels. Additionally, future research should consider a diversified approach of age, race, culture, and contextual factors, along with other demographics. This could influence young and old students'

learning experiences and how learning with mobile-based and innovative technology for social networking and collaboration can enhance personal well-being.

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