



Scan to know paper details and
author's profile

Achieving Academic Satisfaction through the use of Education-Based Technologies: Strengthening Students Personal Well-Being While Facing Online Learning Mandates and Digital Disparities

Angela Pearce

Grand Canyon University

ABSTRACT

In early 2020, 1.6 billion students were forced to engage in remote learning for the purposes of education continuation. As a result of online learning mandates, digitized and mobile technologies have influenced various dimensions of students' personal well-being. Many students are subjected to the digital inclusion of having the needed technologies to effectively engage in electronic-based learning platforms and infrastructures. Contrary to such, various student bodies face pandemic and pre-pandemic digital disparities and social exclusions, thus denying them the opportunity to participate in electronic-based educational practices required for academic achievement and success. This study explores how educational-based technologies are used to increase students' personal well-being and academic satisfaction while also facing online learning mandates and being subjected to digital disparities. Moreover, this study evaluates how multifactorial and innovative technologies for educational practices impede or proliferate well-being, life and academic satisfaction, and happiness. Seligman's (2011) PERMA Theory of Well-being is adopted as a grounding method. The PERMA Theory of Well-being comprises five distinct pillars: positive emotions, engagements, relationships, meaning, and achievement.

Keywords: academic satisfaction, educational- based technologies, well-being, perma, digital disparities.

Classification: FOR CODE: 139999

Language: English



London
Journals Press

LJP Copyright ID: 573333
Print ISSN: 2515-5784
Online ISSN: 2515-5792

London Journal of Research in Humanities and Social Sciences

Volume 21 | Issue 5 | Compilation 1.0



© 2021, Angela Pearce. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncommercial 4.0 Unported License <http://creativecommons.org/licenses/by-nc/4.0/>, permitting all noncommercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Achieving Academic Satisfaction through the use of Education-Based Technologies: Strengthening Students Personal Well-Being While Facing Online Learning Mandates and Digital Disparities

Angela Pearce

ABSTRACT

In early 2020, 1.6 billion students were forced to engage in remote learning for the purposes of education continuation. As a result of online learning mandates, digitized and mobile technologies have influenced various dimensions of students' personal well-being. Many students are subjected to the digital inclusion of having the needed technologies to effectively engage in electronic-based learning platforms and infrastructures. Contrary to such, various student bodies face pandemic and pre-pandemic digital disparities and social exclusions, thus denying them the opportunity to participate in electronic-based educational practices required for academic achievement and success. This study explores how educational-based technologies are used to increase students' personal well-being and academic satisfaction while also facing online learning mandates and being subjected to digital disparities. Moreover, this study evaluates how multifactorial and innovative technologies for educational practices impede or proliferate well-being, life and academic satisfaction, and happiness. Seligman's (2011) PERMA Theory of Well-being is adopted as a grounding method. The PERMA Theory of Well-being comprises five distinct pillars: positive emotions, engagements, relationships, meaning, and achievement. These distinguished dimensions are significant to commissioning educational-based types of machinery and platforms for the purposes of knowledge acquisition and intellectual sustainability. In a broader sense, the digital gap persists between communities, generations, and geographically.

Being provided or being able to afford the necessary physical materials and resources is vital when propagating the idea of taking an online/remote/blended learning approach. Implications and future suggestions are addressed and discussed.

Keywords: academic satisfaction, educational-based technologies, well-being, perma, digital disparities.

Author: Angela Pearce, Grand Canyon University, Phoenix, AZ, USA.

I. INTRODUCTION

Establishing and sustaining increased personal well-being continues to be vital in everyday life, irrespective of age, race, ethnicity, or other distinct demographics. Increased personal well-being refers to life happiness and satisfaction, good psychological, physical, and emotional health, social wealth, and resilience (Chen, 2016; Seligman, 2011). Educational-based technologies and digital pedagogies have become substantial instigators to various dimensions of students' and teachers' personal well-being (Pearce, 2021; Schleicher, 2020). Due to the rapid onset and widespread of COVID-19 and SARS-CoV-2 infections, resulting in school and academic institution shutdowns, students globally were forced into using digitized, mobilized, and socially-oriented technologies for the purposes of academic engagement and achievement, or otherwise (Pearce, 2020a; Schleicher, 2020). The results of inevitable and life-threatening viral plague impacted were more than 800 million

schools, 190 countries, approximately 1.6 billion students, with over 34 million being primary and secondary learners, along with an overwhelming number of teachers, instructors, parents, and caregivers, resulting in an education crisis (Azubuike et al., 2021; The World Bank Group, 2021). To date, humans continue to live among the incubus coronavirus, its variants, unrelenting death rates, and a recent profound rise in COVID-19 health-related conditions and hospitalizations among young and school-aged children.

While living amongst an incurable and unstoppable pandemic, personal well-being, sustainability, and mental health has significantly shifted individuals' outlook in life. Personal well-being is a result of positive emotions, positive engagements, positive relationships, meaning or purpose, and achievement, components that make up the PERMA theory of well-being (Seligman, 2011). Furthermore, personal well-being is essential to everyday life while considering internal and external influences regardless of a person's academic, private, or professional background (Yu, Shek, & Zhu, 2018). Humans aspire to thrive and flourish in life (Seligman, 2011). They make every attempt to strategically place themselves in positions where the benefits outweigh costs and barriers. Innovative technologies provide individuals with a flood of opportunities to establish and sustain personal connections, engage in meaningful and purposeful interactions, and take on new life endeavours. More importantly, many use technologies to increase their mental health and personal well-being. For this study, these personal connections, engagements, and novel quests are based on educational involvements while facing digital disparities and social exclusions.

Engagement in online learning full-time has become a new adventure for many school-aged children and adults. The online learning mandate of using education-centric platforms and digital infrastructures have substantially impacted students' and teachers' personal well-being, positively and negatively (Chen, 2016; Lee, Kwon, & Richards, 2019; Li, Gow, & Zhou, 2020; Pearce,

2021; Yu et al., 2018). Some positive affectives are associated with multidimensional aspects of PERMA, meaning positive emotions are not just about happiness that could lead to educational satisfaction or academic achievement. Positive emotions are defined as feelings of joy, love, compassion, acceptance, gratitude, amusement, and feeling good about current and past situations and circumstances (Seligman, 2011). When educational practices elicit positive emotions among students and teachers, it contributes to increased personal well-being, health, heightened academic performance and satisfaction, and promotes resilience (Chen, 2016; Lee et al., 2019; Pearce, 2021; Yu et al., 2018). Positive emotions and feelings are also a result of good moods, optimism, positive behaviours, academic performance, memory, increased attention and social presence, motivation, and cognitive fitness (Li et al., 2020; Yu et al., 2018).

Contrarily, negative emotions can lead to educational dissatisfaction and emotional overloads (Lee et al., 2019; Pearce, 2021). By using digitized and mobilized technologies for remote and online learning, a wealth of information is placed at a student's fingertips, exposing them to information and cognitive overloads, which can elicit unpleasant emotions and reduce academic satisfaction (Li et al., 2020; Pearce, 2021; Yu et al., 2018). Exposure to negative stimuli, toxic and unhealthy learning environments, inability to establish authentic connections, feeling meaningless, and feeling as though they have not achieved or accomplished anything while engaged in the online learning experiences are also a result of academic dissatisfaction (Li et al., 2020; Pearce, 2021). It is also a result of inattentiveness, lack of motivation, and memory febleness, leading to increased dropout and attrition rates (Lee et al., 2019; Li et al., 2020; Pearce, 2021).

Constructive use of innovative technologies for learning can significantly increase students' and teachers' social wealth and mental health. These online learning platforms and infrastructures can motivate and encourage communication and the establishment and sustainability of authentic, trusting, and fruitful connections such as

student-teacher and student-student dyads, internationally and domestically (Al-Harrasi & Al-Badi, 2014; Chen, 2016; Pearce, 2021).

Socially-oriented and mobile-based learning and communication technologies provide students with many opportunities to collaborate and socialize (Al-Harrasi & Al-Badi, 2014; Pearce, 2020a; Pearce, 2021). Through online educational engagements, students can feel good about getting the needed social support, immediate feedback related to course materials, flexibility in completing assignments and changing their learning contexts, sharing knowledge and personal experiences, and increasing their digital knowledge and literacy skills (Pearce, 2020b; Pearce, 2021; Vladova et al., 2021).

It is unquestionable that many students already use various technologies for many reasons and access innumerable social media and social networking sites and readily engage in digital gaming (Al-Harrasi & Al-Badi, 2014). Excessive screen time considerably influences young children's psychological well-being, development, cognition, critical thinking skills, behaviours, and learning achievement (Przybylski & Weinstein, 2017; Yu et al., 2018). However, the United Nations International Children's Emergency Fund and the International Telecommunication Union (UNICEF-ITU) (2020) finds that there are still two-thirds, or 1.3 billion school-aged children ages 3- to 17-years-old, and 759 million or 63% of persons 15- to 24-years-old globally without home broadband and internet connections. Due to internet absence or scarcity, students are faced with experiencing digital homework gaps, meaning lacking necessary internet and home broadband connections or computers needed to complete homework assignments (Auxier & Anderson, 2020; Schaeffer, 2021). Being equipped and having access to quality physical materials and resources are crucial to engaging in remote and online educational practices.

Fitting into the category of physical material and resource accessibility are associated with digital inclusion or being categorized as "the haves" (DiMaggio & Hargittai, 2001; van Deursen & van Dijk, 2018). Comparatively, being denied or not

having access to essential physical materials and resources needed to engage in online and remote learning or being granted the option to participate in technology-driven societies is a result of being subjected to digital disparities and inequalities or fitting the categorization of "the have-nots" (DiMaggio & Hargittai, 2001; van Deursen & van Dijk, 2018).

Many students and school districts face digital disparities or are subjected to being part of the "have-nots." Being disproportionately denied access to technology-based infrastructures such as quality broadband and internet connections contributes to negative emotions, pessimistic and disapproving attitudes toward technology for educational purposes, and lack of opportunity (Pearce, 2021). Lack of technology-based educational resources and materials is also a consequence of academic failure and dissatisfaction, mainly when learning platforms are not user-friendly, difficult to navigate, and when broadband and internet connections are unstable or absent altogether (Pearce, 2021). Sociodemographic and socioeconomic characteristics are crucial to digital disparities, those related to low income of earning less than \$30k a year, age, race, gender, educational level, and geographic localities (Anderson & Perrin, 2018; Elena- Bucea, Cruz-Jesus, Oliveira, & Coelho, 2020; Vogel, 2021).

While considering socioeconomics, socio demographic, and geographies, approximately 77% of American households subscribe to high-speed home broadband connections, up from 73% in 2019 (Perrin, 2021). Additionally, 89% of the United Kingdom population are subscribers, up from 82% in 2019, respectively (O'Dea, 2021). Given the increased home broadband subscription rates, most public and private households have taken the initiative to reduce their susceptibility to digital and social exclusion affiliation and statistical status. The global digital population continues to accelerate upwardly. There are 4.66 billion active internet users, making up 59.5% of the entire population globally, with Northern Europe ranking top place, having a 96% internet penetration rate (Johnson, 2021a). More importantly, 92.6% or 4.32 billion

users were active mobile internet users, while 4.2 billion were active social media users, and 4.15 billion were active mobile social media users (Johnson, 2021a). According to the Organisation of Economic Co-operation and Development (OECD) (2021), fixed broadband subscriptions totalled 454 million, whereas Switzerland (47.5%), France (45.6%), Norway (44.6%), and Denmark (44.2%) are the leading countries. Likewise, when it comes to internet usability, China ranked the highest, having 979 million monthly users, following India with 846 million and the United States with 304 million monthly users (Johnson, 2021b). Many households globally are subscribing to home broadband and internet services. However, specifically in American families, 15% of U.S. home broadband subscribers, including 34% of the persons making less than \$30k a year, cannot afford their home broadband subscriptions (Anderson & Perrin, 2018; McClain, 2021; Vogel, 2021). More importantly, many of these subscribers reported frequent internet connection interruptions (Perrin, 2021), which adds to students' academic dissatisfaction. This study explores how educational-based technologies are used to increase students' personal well-being and academic satisfaction while also facing online learning mandates and being subjected to digital disparities. Moreover, this study evaluates how multifactorial and innovative technologies for educational practices impede or proliferate well-being, life and academic satisfaction, and happiness. Seligman's (2011) PERMA Theory of Well-being is adopted as a grounding method.

1.1 Objective

The purpose of this literature review is to provide insight into how using multifunctional and innovative technologies for educational practices impedes or proliferates academic satisfaction while considering various dimensions of personal well-being, specifically, positive emotions, engagements, relationships, meaning, achievement, as well as health.

1.2 Hypothesis

This study hypothesizes that there are some

significant personal and well-being, and mental health barriers associated with using technology for educational practices and achievement and being faced with digital inequalities.

1.3 Method

This study examines previous works of peer-reviewed literature related to students' and teachers' overall personal well-being and academic achievement. Students' and teachers' involvement in using technology in education is profound. Their personal well-being and health are substantial contributors to intellectual satisfaction and overcoming barriers related to mental health complexities and digital disparities.

II. DEFINING ACADEMIC SATISFACTION

Any attempt to understand and define academic satisfaction can present complexities. Many individuals and educational researchers view "academic satisfaction," "academic achievement," and academic success," or "student success" and "student achievement" differently. More importantly, each student will have an unparalleled view of what their own academic satisfaction means. Students' level of academic satisfaction is a result of them being satisfied with their school or educational institution and subjective health (Finn & Darmody, 2017). This is particularly the case for international and English as a second/foreign language (ESL/EFL) students (Finn & Darmody, 2017; Sadoughi & Hejazi, 2021; Yil-Jyrä, 2014). Moreover, educational outcomes and experiences that result in good grades, scholarships, social support, quality relationships and engagements with peers and teachers, grants, awards, diploma/degree, publication, knowledge acquisition, collaboration opportunities, perfect attendance, and the like are also significant predictors of students' intellectual achievement but not necessarily academic satisfaction (Li et al., 2020; Pearce, 2021; Sadoughi & Hejazi, 2021; Yil-Jyrä, 2014). When students are exposed to pleasant stimuli, such as enjoyable learning experiences, the brain's reward centres are activated, increasing personal well-being, and enhancing life and academic satisfaction (Li et al., 2020).

Although used interchangeably and as a catchall phrase, the terms *academic* and *students'* is applied to the term success or satisfaction, i.e., academic success, students' success, academic satisfaction, and students' satisfaction, thus narrowing the scope of what success entails (York, Gibson, & Rankin, 2015). To understand what academic satisfaction means, one must consider the various internal and external factors influencing a student's educational experiences. Take, for example, culture. Culture affiliation affects an individual's attitudes, beliefs, thought processes, social influences, behaviours, individual and collective awareness, and intellect (Oyserman & Lee, 2008). It contributes to self-conceptualization, environment, personal affiliations, and relationships (Oyserman & Lee, 2008). Environmental and external factors are significantly related to academic experiences and success, pedagogies, behaviours, interactions, and contexts (Yu et al., 2018).

Personal well-being components are also significant predictors of academic satisfaction. Students' emotions, engagements, relationships, feeling meaningful, and achievements influence educational experiences and satisfaction. These entities can also impact the learning environment, behaviours, willingness to engage, interact, socialize, and collaborate with other students and teachers. The multidimensional well-being qualities also play an integral role in students' enthuses to increase social presence. They experience reduced feelings of loneliness, abandonment, isolation, being ignored, or unimportance on a positive front. In light of this research and taking into account the PERMA theory of Well-being, achieving academic satisfaction is viewed as:

Students feel good about their educational experiences and competencies; they feel they have achieved something, increased their level of intellect, and developed new skill sets personally and professionally; they have established and sustained meaningful and purposeful connections and engagements.

This definition is specific to achieving academic satisfaction and personal well-being, as this could

be definitive to academic well-being given that students' personal well-being significantly influences their academic satisfaction, and students' academic satisfaction can substantially impact their personal well-being, meaning, their emotions, engagements, relationships, meaning, and achievement.

III. DEFINING DIGITAL DISPARITIES

To engage in digital-based educational practices, accessibility to technology resources is vital. Digital disparities and inequities refer to persons and communities not having access to various information communication technologies to fully participate in technology-driven societies (van Deursen & van Dijk, 2018; Pearce, 2020b). Not having or having access to quality broadband and internet connections is defined as being part of the haves and the have-nots (DiMaggio & Hargittai, 2001). These resources could stem from having access to and being able to afford quality equipment and stable broadband and internet connectivity. However, this is not the case for most students and teachers, as some school districts in poor and underserved communities inevitably face digital disparities and inequities (Pearce, 2020b; Reddick et al., 2020; van Deursen & van Dijk, 2018). Being marginalized and residing in underprivileged and underserved communities, that is, geographical restrictions indubitably lead to a lack of quality broadband and internet connections or not having connections at all (Pearce, 2020b; Reddick et al., 2020; van Deursen & van Dijk, 2018). As a result of digital inaccessibility, students substantially fall behind academically when compared to students who fit the digital inclusion criteria, and their educational outcome results in academic failure and dissatisfaction (Dorn et al., 2020; Hardy, 2019; Pearce, 2020b; Pearce, 2021; Reddick et al., 2020; Salemink et al., 2017).

Lacking digital necessities stems from internet service providers (ISPs), distributors, policymakers, and significant decision-makers choosing not to place broadband services in rural and poor communities (Hardy, 2019; Pearce, 2020b; Pearce, 2021; Reddick et al., 2020; van

Deursen & van Dijk, 2018). Quality high-speed broadband and internet connections are based on subscription continuation, sustainability, and profitability (Hardy, 2019; Pearce, 2020b; Pearce, 2021; Reddick et al., 2020; van Deursen & van Dijk, 2018). Having access to digital technologies and broadband and internet connectivity's fit the technology use paradigms and shifts of being part of the haves and the have nots (DiMaggio & Hargittai, 2001).

Disproportionate denial and access to quality services and connectivity are categorized as being part of the have-nots (DiMaggio & Hargittai, 2001). In contrast, persons who do have access to quality physical materials and resources are the haves (DiMaggio & Hargittai, 2001).

Students not provided with essential materials and resources continue to fall behind academically (Dorn et al., 2020; Pearce, 2020b, Pearce, 2021). Research has shown that persons residing in rural and impoverished communities significantly linger behind those students positioned in urban and suburban communities where digital resources and internet accessibility are readily available and limitless (Dorn et al., 2020; Pearce, 2020b; Pearce, 2021). Approximately 77% of Americans are home broadband subscribers (Perrin, 2021). While the rates of home broadband subscriptions have increased over the past couple of years, from 73% respectively, approximately 30% of the subscribers reported that they frequently experience connection interruptions, resulting in increased frustration and anxiety of using technology for academic engagements (Anderson & Perrin, 2018; Perrin, 2021).

Digital divergences between countries and communities continue to be investigated. Developing countries are afforded the pleasantries and privileges of quality services, connections, and steadfast maintenance and upkeep. Additionally, well-developed countries have developed a reputation of digital inclusion. Contrastingly, underdeveloped countries and rural communities continue to face digital challenges and inequalities (Hardy, 2019; Pearce, 2020b; Reddick et al., 2020; van Deursen & van

Dijk, 2018). Unquestionably, many geographical localities within affluent countries are subjected to digital inequities. The areas that face digital and geographical restrictions are nonetheless rural and poor communities where marginalized, and those facing destitute situations reside (Hardy, 2019; Pearce, 2020b; Reddick et al., 2020; van Deursen & van Dijk, 2018). Specifically, families lacking or opting out of digital memberships or services are from low education, low income, and senior adults aged 65 and older homes (Elena-Bucea et al., 2020; Vogels, 2021).

Because students are part of these households of non-home broadband and internet subscribers or reside in communities where connections are absent altogether, students face digital 'homework' disparities (Auxier & Anderson, 2021; Schaeffer, 2021). Students have significantly fallen behind academically due to the 2019 coronavirus pandemic and being forced into online and remote learning (Dorn et al., 2020). Recent reports reveal that white school-aged children and students residing in affluent communities with quality broadband and internet access, and computer equipment have fallen behind 5 to 9 months academically (Dorn et al., 2020). The results were more detrimental for students of colour and those residing in poor neighbourhoods or attending schools that face destitute situations, as they have fallen behind 12 to 16 months academically, threatening their chance of moving to the next grade level (Dorn et al., 2020).

Many attempts have been made to bridge the digital divide and promote academic satisfaction, mainly as billions of school-aged children and their educational achievement and success are impacted. A significant project implemented by the Federal Communication Commission (FCC) (2020) is the Digital Opportunity Data Collection (DODC) to pinpoint digitally deprived and underprivileged communities. Furthermore, the FCC's Rural Data Opportunity Fund (RDOF) project has invested approximately \$20 billion to place quality broadband connections in rural and poor communities and offer governmental subsidies that would provide discounted and

reduced pricing of home broadband monthly subscriptions (FCC, 2020). Even with these efforts, some low-income households, some 34% of the 63% of rurally positioned subscribers struggle to pay their monthly subscriptions even at discounted rates (McClain, 2021; Pearce, 2021; Perrin, 2021; Vladova, 2021). Given this, financial challenges will continually influence students' academic satisfaction, personal well-being, and subject them to the multiplicity of digital disparities (McClain, 2021; Pearce, 2021; Perrin, 2021; Vladova, 2021).

IV. THEORETICAL UNDERPINNING

Seligman's (2011) PERMA Theory of Well-being demonstrates the various elements associated with how individuals flourish and thrive in life. Having increased well-being is a result of life satisfaction, good health, and happiness. The five pillars of PERMA are positive emotions (P), engagements (E), relationships (R), meaning (M), and achievement (A) (Seligman, 2011). The distinctive elements are the building blocks to establishing and sustaining a happy and healthy lifestyle (Seligman, 2018). Being in positive moods, focusing on positive outcomes rather than the negative, having quality and authentic connections, knowing one's purpose, and meaning, and feeling as though one has achieved or accomplished something in life is a result of

increased personal well-being and health (Seligman, 2011, 2018). Possessing and practicing all these elements leads to self-fulfilment, a found state of flow, and living a meaningful and good life (Seligman, 2011).

Various measuring tools have been used to examine an individual's personal well-being. The PERMA-Profilier developed by Seligman is a 23-item, 11-point Likert scale, ranging from 0 to 10, used to measure functioning related to positive and negative emotions, engagements, relationships, meaningfulness, and accomplishment (Seligman, 2011). Increased well-being and finding a state of flow are measured by optimal experiences. The good outweighs the bad, and individuals take the time and effort to engage in pleasurable and memorable activities where they become completely immersed, causing them to unconsciously lose track of time (Seligman, 2011). More importantly, the distinct well-being components can be practiced or implemented into a person's daily life independently or collectively, as there is a significant overlap between the various dimensions. This study takes a PERMA approach to understand academic satisfaction and how it relates to personal well-being while facing digital disparities.

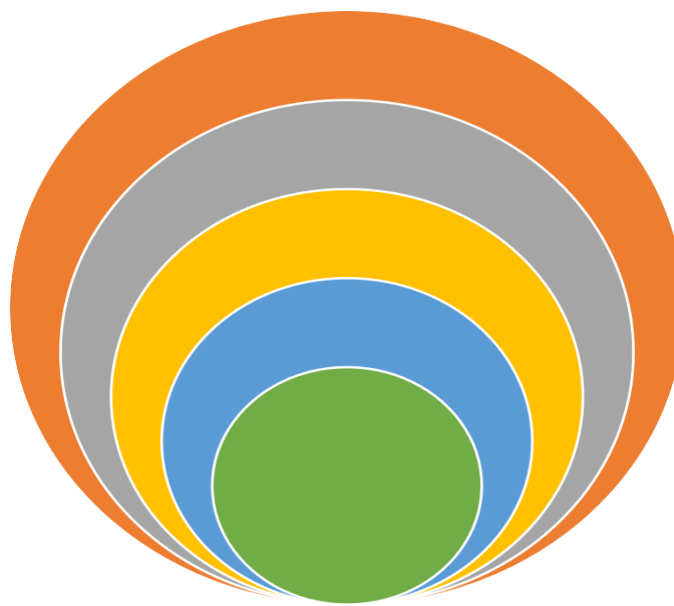


Figure 1: The PERMA Theory of Well-Being (Seligman, 2011)

This image represents the PERMA Theory of Well-being dimensions developed by Seligman. PERMA comprises five pillars: positive emotions, engagements, relationships, meaning, and achievement, and they are essential elements that complement one another. These components are not mutually exclusive, as each one can be independently or collectively implemented into everyday life practices and activities, as each element significantly overlaps.

4.1 PERMA Elements Defined

Personal Well-being. Personal well-being is an operationalized and measurable construct of happiness and life satisfaction (Seligman, 2011). To improve personal well-being, individuals can readily practice and implement the various pillars into their daily lives, those associated with the PERMA theory of well-being, which involves positive emotions, engagements, relationships, meaning, achievement, and good health (Seligman, 2011). Health and personal well-being are influenced by various internal and external factors related to cognition, physical, emotional, spiritual health, environment, cultural, social, and behavioural factors (Pearce, 2021; Yu et al., 2018). It can be applied to all life genres, academically, personally, socially, professionally, societally, and environmentally. For educational practices, taking into consideration students' personal well-being and mental health is essential. When students are presented with positive stimuli, have positive and meaningful engagements, feel as though the learning experience is purposeful, can establish and achieve authentic relationships and positive outcomes, it increases their personal well-being and leads to optimal learning (Pearce, 2021). Specifically, when academic institutions consider the pillars associated with PERMA theory of well-being, individually or collectively, it can result in academic satisfaction and pleasurable educational experiences, self-determination, and self-gratification (Yu et al., 2018).

Positive Emotions. The evolution of positive emotions goes beyond happiness. Positive emotions are about feeling good about current

and past life situations and experiences (Seligman, 2011).

Feeling good is fundamentally based on feelings of joy, compassion, gratitude, love, and hope (Seligman, 2011). For students, and using technology for the purposes of academic satisfaction, when students find their engagement in technology-based learning infrastructures and platforms to be pleasurable and easy to navigate (Pearce, 2021). Students' and teachers' responsiveness, social support, opportunities to socialize themselves and collaborate result from positive emotions, leading to academic satisfaction, social presence, and increased productivity.

Engagements. Engagements are a result of finding flow. Like positive emotions, engagements are restrictive to subjective measures (Seligman, 2011). Positive engagements or finding a state of flow means becoming completely immersed in certain activities, as the outcome entails a person losing track of time while being entirely focused on a specific task or goal (Seligman, 2011). All other elements of PERMA, meaning, positive emotions, positive relationships, meaning, and achievement, are by-products of positive engagements. For students, positive engagements are based on communicating with teachers and other students, collaboration, or cooperation, and engaging in mentally stimulating and pleasurable, and enjoyable assignments. How students learn is supplemental to their willingness to readily engage in online and remote-based learning. More importantly, motivation, attention, and emotions are critical drivers to learning achievement (Li et al., 2020; Yu et al., 2018).

Relationships. Authentic relationships refer to feeling loved, supported, and valued (Seligman, 2011). When individuals can establish and sustain genuine connections, it contributes to life satisfaction, social wealth, health, and overall personal well-being. For students, forming organic, trusting, and respectful relationships in educational settings is essential. When students can connect and form bonds with peers and faculty, students may perceive using technology for online and remote-based educational practices

as worthwhile. It also increased their motivation to communicate, socialize, collaborate, and share knowledge and experiences (Pearce, 2020a; Pearce, 2021).

Meaning. Meaning refers to having a sense of purpose, being cognitively and physically healthy, and thriving and flourishing in life. Purposefulness living and standing for something larger than self and finding certain situations or involvements pleasurable and meaningful (Seligman, 2011). It is subjective and aids in judging circumstances logically, coherently, as well as contradictorily (Seligman, 2011). Regardless of educational, personal, and professional backgrounds, every person has their own unique way of describing their life experiences and meaning. When using technology for academic achievement or satisfaction, students finding meaning in their academic engagements are based on their academic involvement and successful outcome. Using technology for learning and communicating with others produces positive emotions, leading to meaningful and mentally stimulating engagements and feeling a sense of purposefulness.

Achievement. Achievement is based on completing specific tasks or accomplishing set goals. Humans pursue personal, professional, and academic achievements for their own personal sake (Seligman, 2011). They do so to feel better about themselves, become a better self, and achieve self-mastery. For students, accomplishments are a result of rewarding academic outcomes. Some tangible rewards are establishing authentic connections and bonds with peers, medals, prizes, incentives, degrees or diplomas, and the like. Intangible achievements include feeling good about knowledge, competencies and acquisition, positive learning engagements, those that are meaningful and mentally stimulating, receiving good grades, high grade point averages, perfect attendance, and scholarships.

V. STRENGTHENING STUDENTS PERSONAL AND ACADEMIC WELL-BEING USING TECHNOLOGY

Innovative and emergent technologies dominate all life genres, influencing students' personal well-being, health, and academic satisfaction. Since being exposed to an unforeseeable COVID-19 and SARS-CoV-2 pandemic, various multifaceted technologies have become a robust literary mainstay, influencing students' overall personal well-being. Students globally were impacted by widespread school closures and forced to participate in online and remote learning processes regardless of access to technological-based resources, materials, and adequate training.

In academia, students' and teachers' personal well-being is often overlooked and not considered for learning and teaching practices (Yu et al., 2018). Many schools and academic institutions focus on the curriculum rather than taking a whole-school-centred approach that embraces their emotions, engagements, relationships, feelings of meaning, and levels of achievement (Council of Europe, 2021). Failing to consider elements associated with students' personal well-being and health can detrimentally impact their academic satisfaction, thus eliciting negative emotions related to feeling dissatisfied, unimportant, unheard, ignored, lonely, isolated, and the like (Pearce, 2020b; Pearce, 2021; Yu et al., 2018). Now that billions of students, an astonishing number of teachers, and other educational stakeholders are forced into remote learning for the purposes of academic satisfaction and success, their well-being and mental health should be put at the forefront and integrated into education and pedagogical curricula.

Receiving good grades does not equate to academic achievement and satisfaction (Yil-Jyrä, 2014). Interlocking variants of the PERMA theory of well-being and academic satisfaction while also considering digital inclusivity should be embraced in online and remote learning. This way, primary educational stakeholders, i.e., students and teachers, get the best of both worlds.

Increasing students' personal well-being while considering their mental health will undoubtedly increase the levels of academic satisfaction and achievement. Provided is a list of some ways to improve and sustain students' personal well-being, academic well-being, and health using education-based technologies for remote and online learning are as follows (these methods can also be applied to offline/in-class and blended learning):

- Encourage class participation and the sharing of knowledge and personal experiences.
- Encourage collaboration by assigning group assignments and tasks.
- Encourage social networking to boost social enrichment between student-students and student-teachers.
- Provide students with the option to engage in cognitively stimulating activities and those they show great interest.
- No tolerance for disrespectful, rude, negative comments.
- Encourage students to form connections with other students, whether domestically or internationally.
- Encourage daily physical activities
- Encourage students to set realistic, measurable, and achievable goals.
- Ensure students have access to quality materials and resources needed to actively engage in the online and remote learning platforms.
- Ensure students receive proper training on the education-based and learning platforms
- Be responsive, supportive, and provide constructive feedback.
- Ask students how they are feeling and be willing to listen.
- Encourage students to complement other students.
- Celebrate achievement by offering rewards and incentives for groupthink and individually completed assignments.
- Create an all-inclusive, culturally responsive, and welcoming learning environment
- Provide opportunities to engage in teacher-student interactions.
- Embrace a positive learning atmosphere

- Encourage volunteering and Internships
- Encourage educational community involvement.
- Provide user-friendly and easy-to-navigate applications and software packages.
- Encourage students to reflect on past experiences, successes, and failures.

Provided are suggestions, as they are not exhaustive. Educational satisfaction is based on academic institutions taking a student-teacher-centre approach that encourages students' and teachers' involvements and voices. Strategies to increase students' personal well-being are making them feel heard and that they, themselves, their overall well-being, and mental health are placed above all else, and they know that they matter not as students but as persons.

VI. STRENGTHENING STUDENTS PERSONAL AND ACADEMIC WELL-BEING WHILE FACING DIGITAL DISPARITIES

Digital exclusivities have the potential to substantiate students' personal and academic well-being. Disadvantaged students and school districts positioned in rural and impoverished communities are imperilled to not having access to physical materials and resources needed to participate in online and remote learning successfully (Pearce, 2020b; van Deursen & van Dijk, 2018). These digital disparities are not necessarily based on lack of affordability, not possessing computer equipment or access to home broadband connections and the internet. These inequities stem from geographical restrictions where internet service providers and other major decision-makers strategically choose not to place quality broadband connections in rural and impoverished communities (Pearce, 2020b; Reddick et al., 2020). Digital inclusion/exclusion dynamics involve being categorized as the haves or the have-nots (DiMaggio & Hargittai, 2001). In a broader sense, the haves are those who have access and can afford quality broadband and internet connections. Digital inclusivity signifies residing in suburban and urban communities where most individuals have

middle to high socioeconomic statuses or high education (Pearce, 2020b; van Deursen & van Dijk, 2018). It is about being provided with opportunities.

Comparatively, digital disparities or prohibitions significantly reduce an individual's mental health and potential for opportunities, even those related to academic attainment and knowledge and skill acquisition.

Facing digital disparities can spearhead decreased personal well-being and academic dissatisfaction, mainly when educational practices are delivered through online and remote learning infrastructures and platforms. More specifically, facing digital inequalities while being subjected to remote learning mandates can result in negative emotions, decreased mental health, students feeling meaningless, reduced opportunities to establish and sustain quality engagements and relationships, and academic failure. The Federal Communication Commission (FCC) (2020) has taken the initiative to bridge the digital gap by placing affordable broadband connections in areas that lack such services (McClain, 2021). However, low-income households may still face financial hurdles of not being able to afford these services even with discounted prices and governmental subsidies. This means students will continue to face digital homework gaps and potentially be subjected to decreased personal well-being, academic dissatisfaction, failure, and mental health problems (Auxier & Anderson, 2020; Schaeffer, 2021; Vladova, 2021; Yu et al., 2018). Some ways to increase students' personal well-being and academic satisfaction while facing digital disparities and inequalities are as follows ((these methods can also be applied to offline/in-class and blended learning):

- Assist students and low-income households with obtaining the necessary resources and material needed to fully participate in online and remote learning. This could be through identifying schools, public libraries, and community centres where public computers and Wi-Fi connections are available.
- Encourage social networking that does not mandate technology use.

- Encourage students to form study groups, that way, they can establish authentic, meaningful, and purposeful connections with peers and faculty.
- Provide students the flexibility of completing homework and class assignments.
- Encourage daily physical activities
- Teachers support and academic encouragement.
- Encourage students to set realistic, measurable and achievable goals.
- Encourage them to self-reflect by focusing on their strengths and weaknesses.

VII. FINDINGS

Increased personal well-being and academic satisfaction are achievable even for students who face digital disparities and inequalities. Students' overall well-being and mental health are significant to optimal learning experiences, educational satisfaction, and academic achievement (Pearce, 2020a; Pearce, 2021). All educational stakeholders should wish for students to be academically productive and successful. This means encompassing their overall personal well-being and mental health and placing them at the forefront of educational practices, regardless of online or offline engagements and life experiences. For far too long, students' well-being has been overlooked, mainly regarding learning achievement (Yu et al., 2018). Their academic satisfaction continues to be a measure of grades, awards, degrees/diplomas, scholarships, and the like (Pearce, 2021; Yil-Jyrä, 2014; Yu et al., 2018).

When students experience decreased well-being, it results in diminished mental health, which ultimately leads to academic dissatisfaction, cognitive and behavioural problems, negative and pessimistic attitudes, withdrawal, and unwillingness to participate in-class activities and discussions, or complete coursework and homework assignments (Pearce, 2021; Yu et al., 2018). Diminished well-being can also lead to frequent bouts of anxiety, stress, and depression, leading to suicidal thoughts and even actions. Major educational stakeholders, such as teachers, parents, caregivers, administrators, and major decision-makers, must put students' personal

well-being and mental health at the forefront of educational and life experiences, whereby taking whole-school approach and entire-life approaches, meaning taking into consideration internal and external factors (Council of Europe, 2021). Direct external factors that significantly influence students personal and academic well-being are physical health, learning environment (e.g., online and offline), learning with peers and peer influences and presenting opportunities for increased communication, socialization, and collaboration; faculty, parental, and institutions support mechanisms, and academic challenges, meaning students ability to understand course instructions so they can successfully complete assignments (Council of Europe, 2021; Yu et al., 2018). Internal components of personal and academic well-being substantially overlap with societal, social, spiritual, emotional, and cognitive well-being (Council of Europe, 2021).

Given that technology-based learning platforms and infrastructures have become a prominent figure in delivering educational-based and pedagogical instruction, social media and social networking now play a critical role in students' academic satisfaction and well-being. Reports show that when international students of ESL/EFL students are satisfied with their institution, it elicits positive emotions, increased engagements, meaningfulness, and the willingness to establish authentic connections long-term and short-term, resulting in them thriving academically (Finn & Darmody, 2017; Sadoughi & Hejazi, 2021; Yil-Jyrä, 2014). Schools and parents can embrace and encourage activities to increase students' overall well-being and mental health.

These could be online and offline interactions and engagements that are enjoyable and mentally and cognitively stimulating.

Some students need more attention than others. This is particularly the case for special needs, disabled, and disadvantaged students. It is up to all educational stakeholders and society to ensure students receive the needed attention. Students' learning and social environments and society are

primary determinants in how they perceive their educational experiences, whether satisfying or dissatisfying. Learning, social, and societal factors are also significant predictors of students' academic achievement and success. The implementation of technology innovations for educational attainment and knowledge acquisition unquestionably equates to mandating students access to central physical materials and resources needed to effectively engage in online and remote learning processes. It is undeniable that digital disparities will persist, particularly among students and school districts residing in poor and rural communities. Persons with low socioeconomic statuses lack the necessary affordability to purchase quality home broadband connections, internet services, and computer equipment. In short, and to support the hypothesis, personal well-being, mental health, and being subjected to digital disparities or inclusion are significant contributors to academic satisfaction. However, to combat decreased personal and academic well-being and diminished mental health, it is imperative that all educational stakeholders get involved to ensure students have the needed support, guidance, and access essential physical materials and resources required to successfully participate in online and remote learning, as this process is long overdue, as billions of students continually suffer academically, pre-pandemic and pandemic and they will also suffer post-pandemic.

VIII. IMPLICATION AND FUTURE SUGGESTIONS

While this study is based on extant literature, it is grounded by a reputable theory, the PERMA theory of Well-being. This study shows the students personal well-being and mental health is essential to academic success, even for students who face digital disparities. It is recommended that future research investigate students' personal well-being and mental health and its relationship to academic satisfaction using alternative theories such as social cognitive theory, culturally responsive teaching, technology acceptance models I, II, and III, and unified theory of acceptance and use of technology, that can add significance to existing bodies of research.

Researchers can take a qualitative or quantitative approach and implement various designs. Doing this will assist in building a foundation to show that the personal well-being and mental health of students, regardless of socioeconomics and socio-demographic, and geographic position, is vital and should not be overlooked or undervalued.

IX. CONCLUSION

Technology innovations influence every aspect of human's lives, personally, economically, socially, professionally, societally, and academically. Engagements in various technologies significantly affect individuals' personal well-being and mental health. This is particularly the case for students who seek academic achievement and satisfaction, even while facing digital disparities and inequalities. Now, and more than ever, digitized, and mobilized technologies are essential tools employed to aid students in learning achievement and academic satisfaction.

However, it is noteworthy that many students globally face dramatic implications of not having the necessary resources and materials needed to readily engage in technology-based educational practices and digital pedagogies. Due to the 2019 coronavirus pandemic, technology mandates have placed many students at a greater disadvantage of not achieving academic satisfaction.

However, this is not the fault of school districts and their decision-making practices. It is a result of ISP, policymakers, and major decision-makers choosing not to place quality broadband connections in rural and underserved communities where disadvantaged and marginalized students reside, thus denying them the opportunity for academic success and satisfaction.

Academic success has been centred around good markings and grade point averages.

Nonetheless, passing grades does not mean students' personal well-being and mental health encompasses vigour. The PERMA theory of well-being demonstrates critical elements to live a

satisfying life regardless of personal or academic experiences. When individuals can incorporate and embrace all or an assortment of these components consistent with positive emotions, engagements, relationships, meaning, and achievement, they not only lead to students' increased personal well-being, but they contribute to improved overall well-being for all stakeholders.

Educational institutions, representing a whole-school approach, must consider all students' well-being and place it at the forefront of their academic engagements. They must also consider internal and external factors, as they substantially influence students' overall well-being and health.

REFERENCES

1. Al-Harrasi, A. S., & Al-Badi, A. H. (2014). The impact of social networking: A study of the influence of smartphones on college students. *Contemporary Issues in Education Research*, 7(2), 129-136. <https://doi.org/10.19030/cier.v7i2.8483>
2. Anderson, M., & Perrin, A. (2018). Nearly one-in-five teens can't always finish their homework because of the digital divide. Pew Research Center. <https://www.pewresearch.org/fact-tank/2018/10/26/nearly-one-in-five-teens-cant-always-finish-their-homework-be-cause-of-the-digital-divide/>
3. Auxier, B., & Anderson, M. (2020). As schools close due to the coronavirus, some U.S. students face a digital 'homework gap'. Pew Research Center. <https://www.pewresearch.org/fact-tank/2020/03/16/as-schools-close-due-to-the-coronavirus-some-u-s-students-face-a-digital-homework-gap/>
4. Azubuike, O. B., Adegboye, O., Quadri, H. (2021). Who gets to learn in a pandemic? Exploring the digital divide in remote learning during the COVID-19 pandemic in Nigeria. *International Journal of Educational Research Open*, 2(2), 1-10. <https://doi.org/10.1016/j.ijedro.2020.100022>
5. Chen, C. (2016). The role of resilience and coping styles in subjective well-being among Chinese university students. *Asia-Pacific*

- Educational Research, 25(3), 377-387. <https://doi.org/10.1007/s40299-016-0274-5>
6. Council of Europe. (2021). Improving well-being at school. <https://www.coe.int/en/web/campaign-free-to-speak-safe-to-learn/improving-well-being-at-school>
 7. DiMaggio, P., & Hargittai, E. (2001). From the 'digital divide' to 'digital inequality': Studying internet use as penetration increases. Working Paper Series, 15. Princeton University: Center for Arts and Cultural Policy Studies. https://digitalinclusion.typepad.com/digital_inclusion/documentos/digitalequality.pdf
 8. Dorn, E., Hancock, B., Sarakatsannis, J., & Viruleg, E. (2020). *COVID-19 and learning loss-disparities grow and students need help*. McKinsey & Company. <https://www.mckinsey.com/~media/mckinsey/industries/public%20and%20social%20sector/our%20insights/covid%2019%20and%20learning%20loss%20disparities%20grow%20and%20students%20need%20help/covid-19-and-learning-loss-disparities-grow-and-students-need-help-v3.pdf?shouldIndex=false>
 9. Elena-Bucea, A., Cruz-Jesus, F., Oliveira, T., & Coelho, P. S. (2020). Assessing the role of age, education, gender and income on the digital divide: European for the European Union. *Information Systems Frontiers*, 23(1), 1007-1021. <https://doi.org/10.1007/s10796-020-10012-9>
 10. Finn, M., & Darmody, M. (2017), What predicts international higher education students' satisfaction with their study in Ireland. *Journal of Further and Higher Education*, 41(4), 545-555. <https://doi.org/10.1080/0309877X.2015.1135887>
 11. Hardy, J. (2019). How the design of social technology fails rural America. DIS'19 Companion: Companion Publication of the 2019 on Designing Interactive Systems Conference 2019 Companion, 189-193. <https://doi.org/10.1145/3301019.3323906>
 12. Johnson, J. (2021a Sept 10). Global digital population as of January 2021. Statista. <https://www.statista.com/statistics/617136/digital-population-worldwide/>
 13. Johnson, J. (2021b, Sept 29). Number of internet users in selected countries in 2021. Statista. <https://www.statista.com/statistics/271411/number-of-internet-users-in-selected-countries/>
 14. Lee, Y. H., Kwon, H. H., & Richards, K. A. R. (2019). Emotional intelligence, unpleasant emotions, emotional exhaustion, and job satisfaction in physical education teaching. *Journal of Teaching in Physical Education*, 38(1), 262-270. <https://doi.org/10.1123/jtpe.2018-0177>
 15. Li, L., Gow, A. D. I., & Zhou, J. (2020). The role of positive emotions in education: A neuroscience perspective. *Mind, Brain, & Education*, 14(3) 220-234.
 16. McClain, C. (2021, Jun 3). *34% of lower-income home broadband users have trouble paying for their service amid COVID-19*. Pew Research Center. <https://www.pewresearch.org/fact-tank/2021/06/03/34-of-lower-income-home-broadband-users-have-had-trouble-paying-for-their-service-amid-covid-19/>
 17. O'Dea, S. (2021). *Broadband penetration in the United Kingdom (UK) from 2007-2021*. Statista. <https://www.statista.com/topics/3655/broadband-in-the-uk/>
 18. Organisation of Economic Co-operation and Development. (2021, Jul 29). OECD broadband statistics update. OECD. <https://www.oecd.org/sti/broadband/broadband-statistics-update.htm>
 19. Oyserman, D., & Lee, S. W. S. (2008). Does culture influence what and how we think? Effects of priming individualism and collectivism. *Psychological Bulletin*, 134(2), 311– 342. <https://doi.org/10.1037/0033-2909.134.2.311>
 20. Pearce, A. (2020a). Socially-oriented technologies attractability influence on individuals academically and neurologically. *ICETC'20: 2020 12th International Conference on Education Technology and Computers* (pp. 165-171). ACM Digital Library. <https://doi.org/10.1145/3436756.3437040>
 21. Pearce, A. (2020b). The digital divide still exists, generationally, rurally, and

- academically. *ICETC'20: 2020 12th International Conference on Education Technology and Computers* (pp. 215-222). ACM Digital Library. <https://doi.org/10.1145/3436756.3437048>
22. Pearce, A. (2021). Optimal learning using technology: Amplifying students collaboration and social networking. *PUPIL: International Journal of Teaching, Education and Learning*, 5(2), 19-32. <https://doi.org/10.20319/pijtel.2021.52.1932>
 23. Perrin, A. (2021, Jun 3). *Mobile technology and home broadband 2021: Smartphone ownership and home broadband adoption are up slightly since 2019. And 30% of Americans say they at least sometimes experience problems connecting to internet at home*. Pew Research Center. <https://www.pewresearch.org/internet/2021/06/03/mobile-technology-and-home-broadband-2021/>
 24. Przybylski, A. K., & Weinstein, N. (2017). Digital screen time limits and young children's psychological well-being: Evidence from a population-based study. *Child Development*, 90(1), e55-e65. <https://doi.org/10.1111/cdev.13007>
 25. Reddick, C. G., Enriquez, R., Harris, R. J., & Sharma, B. (2020). Determinants of broadband access and affordability: An analysis of community survey on the digital divide. *Cities*, 106(1), 1-12. <https://doi.org/10.1016/j.cities.2020.102904>
 26. Sadoughi, M., & Hejazi, S. Y. (2021). Teacher support and academic engagement among EFL learners: The role of positive academic emotions. *Studies in Educational Evaluation*, 70(1), 1-10. <https://doi.org/10.1016/j.stueduc.2021.101060>
 27. Schaeffer, K. (2021, Oct 1). What we know about online learning and the homework gap amid the pandemic. Pew Research Center. <https://www.pewresearch.org/fact-tank/2021/10/01/what-we-know-about-online-learning-and-the-homework-gap-amid-the-pandemic/>
 28. Schleicher, A. (2020). The impact of COVID-19 on education: Insight from education briefly 2020. OECD. <https://www.oecd.org/education/the-impact-of-covid-19-on-education-insights-education-at-a-glance-2020.pdf>
 29. 19-on-education-insights-education-at-a-glance-2020.pdf
 30. Seligman, M. (2011). *Flourish: A visionary new understanding of happiness and well-being*. Free Press.
 31. Seligman, M. (2018). PERMA and the building blocks of well-being. *The Journal of Positive Psychology*, 13(4), 333-335. <https://doi.org/10.1080/17439760.2018.1437466>
 32. The World Bank Group. (2020). *Urgent, effective action required to quell the impact of COVID-19 on education worldwide*. <https://www.worldbank.org/en/news/immersive-story/2021/01/22/urgent-effective-action-required-to-quell-the-impact-of-covid-19-on-education-worldwide>
 33. United Nations International Children's Emergency Fund. (2020). *Two-thirds of the world's school-aged children have no internet access at home, new UNICEF-ITU report says: The International Telecommunication Union and UNICEF call for urgent investment to bridge a digital divide currently preventing children and young people from accessing quality digital learning and opportunities online*. UNICEF. <https://www.unicef.org/press-releases/two-thirds-worlds-school-age-children-have-no-internet-access-home-new-unicef-itu>
 34. van Deursen, A. J., & van Dijk, J. A. (2018). The first-level digital divide shifts from inequities in physical access to inequities in material access. *New Media & Society*, 21(2), 354-375. <https://doi.org/10.1177/1461444818797082>
 35. Vladova, G., Ullrich, A., Bender, B., & Gronau, N. (2021). Students' acceptance of technology-mediated teaching – How it was influenced during the COVID-19 pandemic in 2020: A study from Germany. *Frontiers in Psychology*, 12(1), 1-15.
 36. Vogel, E. A. (2021, June 22). Digital divide persists even as Americans with lower incomes make gains in tech adoption. Pew Research Center. <https://www.pewresearch.org/fact-tank/2021/06/22/digital-divide-persists-even-as-americans-with-lower-incomes-make-gains-in-tech-adoption/>

37. Yil-Jyrä, A. (2014). *Optimal learning experiences in language technology education*. Research Gate.https://www.researchgate.net/publication/325115222_Optimal_Learning_Experiences_in_Language_Technology_Education
38. Yu, L., Shek, D. T., & Zhu, X. (2018). The influence of personal well-being on learning achievement in university students over time: Mediating and moderating effects of internal and external university engagement. *Frontiers in Psychology*, 8(2287), 1-16. <https://doi.org/10.3389/fpsyg.2017.02287>