A Review of Literature on the Effective Pedagogy Strategies for Online Teaching and Learning in Higher Education Institutions: Lessons from the COVID-19 Pandemic

Nomfundo Gladys Khoza

Lecturer in the Faculty of Management Sciences, Central University of Technology

Abstract

This paper reviews the literature on the effective pedagogy for online teaching and learning at Higher Education Institutions throughout the world during the COVID-19 pandemic. The global higher education system has been severely hampered by the COVID-19 pandemic. The sudden and enormous desire for previously face-to-face academic disciplines to be delivered online has posed a unique challenge. Online teaching and learning necessitate a certain level of technological pedagogical content knowledge for effective pedagogic strategies, which are primarily concerned with planning and arranging for better learning opportunities and creating distinct learning environments through the use of digital technology. The effectiveness of lesson delivery with technology integration is characterized as technological pedagogical content knowledge. It is a significant application in all aspects of learning that are necessary for the teaching and learning process. Consequently, this theoretical paper proposes a conceptual model for comprehending the link between effective pedagogy and technological pedagogical content knowledge, both of which result in students' academic performance in an online teaching and learning context. This theoretical paper recommends that Higher Education Institutions have fundamental technological infrastructure and equip educators and students with advanced technologies applicable to online teaching and learning platforms, which is consistent with an Online Collaborative Learning theory. Educators must also be able to effectively use digital technology systems to deliver online lessons. According to this model, Higher Education Institutions will benefit through providing students with essential technical skills that today's employers require and ensuring that universities around the world remain competitive.

Keywords: effective pedagogy, online teaching, and learning, technological pedagogical content knowledge, Higher Education Institutions, COVID-19 pandemic.

Introduction

Background introduction

The COVID-19 pandemic has spread globally, affecting nearly all nations and areas. The virus was first found in Wuhan, China, in December 2019. Sanitation, the use of face masks, physical distancing, and the avoidance of large crowds have all been utilized as preventative measures. To flatten the curve and minimize illness spread, lockdown and stay-at-home tactics have been employed. In response to the COVID-19 pandemic, governments are enacting legislation to ensure that teaching methods continue during the epidemic (Sumitra & Roshan, 2021). However, there is uncertainty and dispute regarding what to educate, how to educate, the burdens experienced by students and educators, the learning environment, and the consequences for educational fairness. During the COVID-19 pandemic, Higher Education Institutions (HEIs) in South Africa have attempted to use technology to assist virtual learning, and online learning and digital training are growing and evolving rapidly. The literature identifies flaws in online teaching and learning, such as a lack of online education infrastructure, instructor inexperience, an information gap, and a complex home situation (Wahab, 2020). Regardless of these restrictions, the current situation requires action to guarantee that students' learning is not compromised in any way.

As a result of the pandemic, HEIs were compelled to conduct all of their operations online. Although online teaching and learning (OTL) is, in general, an alternative to formal instruction, it is a critical component of HEIs' operations during the COVID-19 pandemic (Coman, îru, Schmitz, Stanciu, & Bularca, Europe, 2020). This revolutionary change may increase students' comprehension of OTL procedures. This research focuses on effective pedagogical (EP) techniques that assist in enhancing students' interest in a subject, involving students in learning, developing fundamental learning abilities, keeping students focused on a task, and producing sustainable and beneficial interactions in OTL spaces. Effective pedagogy plays an important part in an OTL process by encouraging students to develop their profiles and assisting them with any subject of interest (Ruarte, 2019). Furthermore, educators employ efficient teaching strategies that continually fulfill their objectives, which are directly or indirectly related to students' learning, as well as approaches to reach these objectives (Habib, 2017). Educators are the single most important factor determining students' academic achievement. Choosing competent educators is critical for HEIs wanting to enhance their outcomes. Educators are well-versed in their educational topic and possess the necessary experience and skills. Moreover, educators use online teaching and learning to build technical material knowledge in their students. Educators also understand how to help students master ideas, content and skills in the most effective way possible, and they use their technological pedagogical content knowledge (TPCK) of learning mechanisms to determine which strategies will be more effective in helping their students understand the subject matter better.

ISSN 2601-8616 (print)
ISSN 2601-8624 (online)

European Journal of
Education

January – June 2022
Volume 5, Issue 1

According to EP and OTL studies, the number of online distance students and programs is growing all around the world (Ruarte, 2019).

The ongoing COVID-19 pandemic has added to the stresses and responsibilities already faced by university educators juggling teaching, research and social commitments, not to mention a balance between work and life (Rapanta, Botturi, Goodyear, Guardia, & Koole, 2020). Educators of all backgrounds have had to prepare and deliver classes from home, with all of the existing technological challenges that entails, and often without the benefit of adequate technical help. Furthermore, a significant challenge for educators has been a lack of technological pedagogical content knowledge (TPCK) necessary for online teaching and learning (Rapanta et al., 2020). According to the suggested model of this research, TPCK incorporates characteristics that are beneficial to students when participating in OTL, such as Collaborative Learning (CL) and Independent learning (IL). More importantly, the model incorporates the technological content knowledge (TCK) and technological pedagogical knowledge (TPK) that educators need when demonstrating a lesson plan appropriate to an OTL environment. In light of the above discussion, this paper is guided by the following research objectives:

  i. To examine the effective pedagogies adopted by Higher Education Institutions (HEIs) across the globe during the COVID-19 pandemic;
 ii. To assess the technological pedagogical content knowledge in HEIs; and
iii. To evaluate the online collaborative learning theory adopted for online teaching and learning in HEIs.

1. Effective pedagogy in Higher Education Institutions

The COVID-19 pandemic drove the shift of teaching and learning to an online content style, which has become a key part of the world's education system (Mishraa, Gupta & Shree, 2020). However, the degrees and strategies of using OTL to achieve quality education vary and are dependent on the different factors associated with the technological pedagogical content knowledge (TPCK) methodology. Furthermore, for universities to produce meaningful outcomes in the implementation of teaching technology, it is important to consider the different forms of interactions between educators, students and technologies. According to Paudel (2021), the use of new technologies should result in a new paradigm in the relationship between educators and students. Additionally, to efficiently and effectively incorporate technological pedagogy in classroom teaching and learning, educators' viewpoints on teaching, TPCK and skills, and teaching methodologies play a crucial role. The educator's job is more of a mentor, a vital discussion partner for students, and a representative for unique topic realms. This indicates that the educator is encouraging greater academic freedom. Educators need to use technological content knowledge (TCK) to alter their interactions with students (Van Leendert, Doorman Drijvers,·Pel & Van der Steen, 2021). Furthermore, the educators' role in using TCK in educational technology should be to promote learners' learning outcomes. Educators should use

technological pedagogical knowledge (TPK) to enhance their practice, develop their careers, design and develop creative approaches, and include students in a range of practice and work tasks to improve their educational results (Paudel, 2021).

2. Technological pedagogical content knowledge in Higher Education Institutions

Technological Pedagogical Content Knowledge (TPCK) is a concept established to describe the collection of knowledge that educators require to teach the students efficiently and to use technologies (Joseline, Santos, Rowell & Castro, 2021). TPCK strives to identify the type of knowledge necessary by educators for integrating technology in effective teaching while recognizing the multifaceted, multidimensional, and contextual nature of educators' expertise. Furthermore, TPCK is crucial for emerging educators since they are the upcoming educators who will shape the next generation. Previous research found that the use of TPCK in the classroom still needs to be prioritized for successful lesson delivery (Joseline et al., 2021). There is minimal emphasis on the skills that educators need to improve early literacy through the use of technology, and educators frequently struggle with effective technology use in their settings. In addition, TPCK is knowledge about complex interactions between the domains of knowledge principles (Janssen, Knoef & Lazonder, 2019). Learning in modern times requires educators' understanding to be able to collaborate with technology. So, it is not only aspects of pedagogy that are important; content and technology are also considered in implementing modern and innovative classroom learning. TPCK integrates complex technology in learning by paying attention to three aspects, namely pedagogy, content, and the technology itself in learning that is developed by the educator effectively. TPCK elaboration and OTL give students the freedom to pick their own pace of learning and the order of learning activities based on their needs. OTL educators can explore the material in online learning by displaying concrete examples (on virtual presentation) so that they are easy to understand (Joseline et al., 2021). The existence of TPCK in an OTL context is interpreted as an innovation to mobilize student participation by utilizing technology. This will require time and training for educators. However, the existence of TPCK is believed to be a role model of learning that is oriented towards the changes and demands of the 21st century in responding to the knowledge era. Various phenomena of everyday life can be raised as the theme of the subject matter. The subject matter is more verbal learning. Various intellectual skills in nature can develop in students, ranging from fact-finding skills to knowing facts to evaluating or judging facts (Mutiani, Supriatna, Abbas, Rini & Subiyakto, 2021).

2.1 Educators' technological content knowledge in online teaching and learning

Technological Content Knowledge (TCK) is described as the ability to communicate, analyze and produce material using technology without regard for education (Hidayah, Na'im & Puji, 2020). Experts in content know-how technology are used. By

ISSN 2601-8616 (print)
ISSN 2601-8624 (online)

European Journal of
Education

January – June 2022
Volume 5, Issue 1

increasing and developing the quality of TCK, the capacity to combine technology and the content of classroom learning materials may be accomplished. Technology content knowledge is the understanding of which technologies are acceptable for usage in various disciplines. Included in this, too, is the awareness that technology may necessitate a content compromise or may improve content representation (Hidayah et al., 2020). Educators must grasp which technology is most suited for their domain's teaching content, as well as how to dictate or modify technology. According to this, educators must be capable of using technology and selecting courses or subject matter that are compatible with the technology that will be utilized in learning.

2.2 Educators' technological pedagogical knowledge in online teaching and learning

Technological Pedagogical Knowledge (TPK) is characterized as the understanding of how to use relevant technology to assist certain teaching and learning techniques without regard for topic content. The foundation for professional growth in 21st-century learning is the integration of technology in enhancing learning with specific pedagogical judgments. Educators are familiar with TPK, which is instructors' knowledge or ability to use various technologies in teaching English for specific and professional understanding (Mulyadi, 2020). According to Heitink, Voogt, Fisser, Verplanken & Van Brak (2017), TPK is an essential knowledge area for educators working in primary education, because these educators are required to teach a wide range of subjects and, as a result, do not always have in-depth subject knowledge.

2.3 Students' collaborative learning in online teaching and learning

Collaborative learning (CL) holds considerable promise in HEIs since it encourages the collaborative production of information as well as the development of skills linked to interaction, which leads to more important learning processes. CL, on the other hand, cannot be effective without proper support since online teaching and learning are considerably more challenging for students because the online environment necessitates new kinds of communication and interaction. As a result, a shift in the educator's role from the conventional transmission of viewpoints to those of a supporter and facilitator of individual and group learning processes is critical (Herrera-Payo, 2021). Collaborative learning in online courses is often seen as beneficial since it improves the interaction between students and instructors while also creating a sense of social presence. When there is no direct human interaction in distant learning, this sensation can aid to decrease student loneliness, which is especially important during traumatic times (Morgan, 2020). This perspective ultimately promotes students' knowledge and overall ability to adapt to various teaching strategies, which supports them in grasping the complexities of teaching and boosts their desire and pleasure (Medwell & Lei, 2021).

3.4 Students' independent learning in an online environment

In today's developing education system, students must be self-directed learners; yet, there is no ideal coursebook that covers all that educators and students may utilize in the classroom. Many students struggle with the transition from their prior studies to the greater independent learning (IL) necessary at university. According to Umaralieva (2021), academic studies require students to take ownership of the learning, become more conscious, and make choices regarding what they will concentrate on as well as how much effort they will invest researching both within and without the classroom. Independent learning is a method, approach and critical pedagogy in which students obtain information by self-motivation and develop inquiry and critical thinking abilities (Umaralieva, 2021). Additionally, it entails the freedom to select how to attain those aims, within the limits of a specific project or program and with the help of an academic consultant. Independent learning necessitates the flexibility of the process to carry out objectives, and it lays more educational responsibility on the student for the achievement of objectives as well as the value of the goals.

3. Online collaborative learning theory

The theory of online collaborative learning (OCL) describes a learning paradigm in which students are enabled and assisted to collaborate to build content (Bates, 2014). Furthermore, students learn to invent, to discover avenues to innovate and, in doing so, to pursue the intellectual information required to solve problems rather than reciting what they believe is the correct answer. Although OCL theory encourages learners to be involved and committed, this is not considered necessary for learning or knowledge creation. According to OCL theory, the instructor is important not as a fellow learner, but as a guide to the information group, or the state of the art in that discipline (Bates, 2014). Learning is characterized as conceptual change and is essential for information construction. The learning practice must be advised and driven by discipline standards, as well as a dialogue framework that stresses conceptual learning and knowledge building (Darling-Hammonda, Flooka, Cook-Harveya, Barronb & Osher, 2020). The aim of online collaborative learning is not to replace the educator, but to use technology to enhance contact between instructor and learners, with a specific approach to learning growth focused on information construction supported and built through social discourse. Therefore, in OCL, the management of social discourse is designed to scaffold learning by assisting with the construction of knowledge in ways that are guided by the instructor, represent the discipline's standards or values, and respect or take into account prior knowledge (Jing & Chen, 2019).

The philosophy of OCL is a concept whose time has come. Students' ability to participate in programs and classes through the Internet and access resources online is forever changing the essence of formal education (Bates, 2014). Higher Education Institutions (HEIs) and educators were caught off guard by the dramatic changes that

ISSN 2601-8616 (print)
ISSN 2601-8624 (online)

European Journal of
Education

January – June 2022
Volume 5, Issue 1

were thrust upon them, especially during the COVID-19 pandemic (Jandrić, Hayes & Truelove, 2020). As a result, research into successful online training and learning methods is both timely and critical. The educational improvements brought on by modern computing and networking technology are important. Students of the current world are more likely to come from a wide variety of cultures, have varying degrees of academic and language skills, and want to learn where and when they want (Simsek, 2015). Thus, research into paradigms other than those commonly identified with universities, where students are often required to attend on-campus courses, sit through seminars and attend face-to-face lessons, is long overdue. One such model that holds great promise in light of the current COVID-19 pandemic is online collaborative learning. Collaborative learning is not a novel concept. Admittedly, it seems that for thousands of years, people have been researching informally in groups (Kukard, 2020). It is therefore important to note that almost all formal learning today, especially at the university level, continues to take place in an atmosphere in which students are required to learn independently (Simsek, 2015). Despite this, students often form their informal research groups which assist them in understanding the content collaboratively. As a result, implementing OCL theory in curriculum development is important for HEIs when enhancing students' learning skills in the context of technology. HEIs must pay careful attention to the appropriate application of teaching techniques not only during the Covid-19 pandemic, but also in the post-pandemic era (Kasradze & Gulua, 2021). In addition, HEIs should select appropriate teaching techniques to ensure the development of skills that are critical for the market competitiveness of graduates of a specific program as well as the field as a whole.

5. Methodology

This paper is theoretical in nature. The researcher took a theoretical and reflective approach that integrated the researcher's viewpoints with an interpretation of existing material. A theoretical method develops an understanding of the subject matter by using frameworks, abstract concepts and ideas related to the subject instead of relying on its practical features or uses (George State University, 2015). This technique, according to Rambe, Ndofirepi & Dzansi (2015), integrates the researcher's individual views and interpretation of existing literature on the different components to comprehend the phenomena under inquiry or to offer a preliminary explanation of the situation. As a result, the researcher uses concepts derived from literature and the researcher's imagination to reach logical conclusions regarding the impact of effective pedagogy strategies for online teaching and learning in HEIs worldwide. Given that the goal of theoretical research is to explain phenomena, this research discusses the relationship between effective pedagogy and TPCK in an online teaching and learning context.
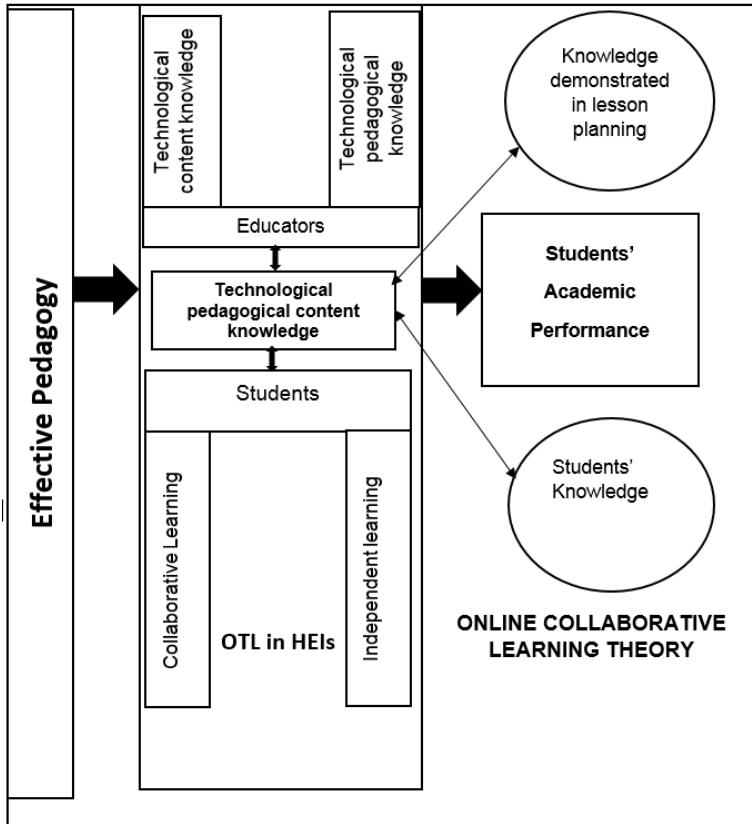
The selection of material for the current research began with a search in the Google Scholar® databases (main collection). Publications containing the phrases "online

teaching and learning", "effective pedagogy", "online learning during the COVID-19 pandemic", and "online learning at HEIs" that reacted to the problem were used in this research. Although the definitions of online, e-learning, virtual, digital, web-based, remote and online courses differ significantly, they were considered relevant for this research, which sought to investigate any type of practice in which the teaching and learning process is mediated by the use of technology in a remote scenario. A total of 35 papers met the inclusion criteria for this research, which mostly focused on online teaching and learning methods at HEIs, in terms of academic journals published, experimental research type, and problem relevance.

6. Conceptual Framework

In an online TPCK context, basic technological methods are best used to teach and direct students toward a stronger, more rigorous comprehension of the subject matter. Within the TPCK context, the two types of knowledge, TCK and TPK, are thus mixed in different ways. Technological pedagogical knowledge (TPK) defines the relationships and connections between technological resources and specific pedagogical activities (Kurt, 2018). However, technological content knowledge (TCK) explains the relationships and intersections between technology and learning objectives. These fields are then combined to form TPCK, which considers the connections between them all and recognizes that educators are working in a diverse environment (Kurt, 2018). Moreover, students learn collaboratively and individually in the TPCK context, with the instructor's guidance, to achieve optimal results in an online environment. According to the model in Figure 1, HEIs must reflect on OCL theory to comprehend OTL and develop effective pedagogies. The model emphasizes that students may gain the necessary information and skills for effective OTL. In an environment where students are exposed to technological advancements, they see it as more than simply a tool for teaching, but also as a means for them to learn collectively and individually. Furthermore, instructors benefit from technological advancements in an OTL environment, such as making the production of learning materials easier. Nonetheless, intelligent use of technology is a key aspect in the 21st century. It should be used to improve students' learning and achievement. Pedagogy refers to the interactions between instructors, students, the learning environment and the learning activities. Effective pedagogy is based on the teacher's lesson development skills, the competency of the learners and the availability of resources. A good pedagogy, according to the model of this research, provides real-world activities that bring out the best in each student while also assisting them in improving their online teaching and learning experiences.

ISSN 2601-8616 (print)
ISSN 2601-8624 (online)

European Journal of
Education

January – June 2022
Volume 5, Issue 1

Figure 1: Model of academic performance of students in an online context (developed by the author)

7. Observations and discussion

Many factors influence a student's academic success, including personal qualities as well as family and community experiences. However, according to Habib (2017), the most significant element influencing student learning is the educator. Previous research has revealed a broad range in productivity among educators (Simsek, 2015). Educators tend to be effective with students of all levels of achievement, regardless of the degree of variety in their classrooms. Effective educators cannot be consistently recognized based on where they went to school, whether they are qualified, or how long they have taught (beyond the first few years). Arguably the most effective method to evaluate their competence is to examine their job performance, which includes what educators do in the classroom and how far their students' performance improves in exams. Many things can be learned by students on their own through research, with educators arranging the learning to accommodate the student. In addition, there are various instances in which an educator must educate more directly. For example, giving explicit explanations, descriptions, and illustrations of

ISSN 2601-8616 (print)
ISSN 2601-8624 (online)

European Journal of
Education

January – June 2022
Volume 5, Issue 1

the information and skills being offered to students (Habib, 2017).

The transformation in teaching and learning to an online delivery modality, compelled by the COVID-19 pandemic, has become an essential component of the worldwide educational system. However, the degrees and ways of employing these components to achieve excellent education vary and are dependent on the different elements connected with the use of technologies and practices in education, even before the shutdown of universities and schools as a preventive step against the COVID-19 pandemic. According to Paudel's (2021) research, understanding the relationships between educators, students and technologies is critical for producing positive results in the incorporation of instructional technology. The introduction of technology has resulted in a paradigm change in the connection between educators and students. To optimally and efficiently incorporate technology into classroom teaching and learning, educators' attitudes on teaching, technological knowledge and abilities, and instructional techniques all play a part. Educator also acts as greater adviser for students' crucial conversations as well as a leader in certain areas of discussion. This indicates that an educator encourages students to be more self-directed in their learning. Educators utilize technology to alter how they engage with students.

Educators utilize technologies to optimize their work, professional development and creation of new techniques, thinking, reflecting on practice, and engaging students in a variety of relevant activities and assignments for improved academic achievement (Paudel, 2021). However, OTL and homeschooling has limitations since many students dropped out of school due to expectations and economic conditions. Studies should be conducted to assist the most economically disadvantaged communities. There have been instances of students dropping out or opting out of school. This is because of the extended break caused by the academic shutdown during the COVID-19 pandemic (Sumitra & Roshan, 2021). Various types of online learning have been created by HEIs throughout the world and made available for learning during this epidemic. The cost and accessibility of these online platforms for all students coming from different economic backgrounds remain a concern. Students with special needs that may pose learning challenges, such as hearing loss, vision loss or mobility issues, require specialized instruction with assistance and supervision. Despite the difficulty of immediately responding to these problems (for example, by providing a peaceful and equipped area for each student), governments have taken certain steps to promote fair and inclusive access to appropriate learning environments (OECD, 2020). Furthermore, parental support for homeschooling is more important than ever in this environment to give students optimal learning circumstances and to help them in their studies during university closures.

8. Conclusion and future research

Before the COVID-19 pandemic, online learning was underutilized, particularly in developing countries. However, the pandemic has compelled the entire globe to

depend on it for educational purposes. To comprehend OTL and investigate effective teaching pedagogies, researchers should consider foundational hypotheses and perhaps infer that OTL is still distinct. This research's proposed model assumes that both students and educators will develop the necessary knowledge and skills for successful OTL in HEIs. The paper suggests that universities build on the two areas of knowledge presented in the model: technological pedagogical knowledge (TPK) and technological content knowledge (TCK). By doing so, universities can improve their ability to evaluate students' learning outcomes and teaching practices. Students must become life-long learners who are familiar with new effective pedagogies for OTL and the new technologies needed to facilitate online learning in today's new online instructional world. While this research is theoretical in nature, future research may require an empirical research approach. A quantitative approach can provide a comprehensive foundation for understanding the overall impact of effective pedagogy strategies for online learning in higher educational institutions, while a qualitative component can deepen our understanding of educators' and students' experiences of online teaching and learning across the globe.

Acknowledgement

References

[1] Bates, T. (2014). Learning theories and online learning.
[2] Coman, C., îru, L.G., Schmitz, L.M., Stanciu, C. & Bularca, M.C. (2020). Online Teaching and Learning in Higher Education during the Coronavirus Pandemic: Students' Perspective. Sustainability, 12, 10367.
[3] Darling-Hammonda, L., Flooka, L., Cook-Harveya, C., Barronb, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. Applied developmental science, 24, 2, 97–140.
[4] George State University Library. (2015). What are Empirical, Review, and Theoretical sources?
[5] http://research.library.gsu.edu/c.php?g=115857&p=753960.
[6] Habib, H. (2017). A research of teacher effectiveness and its importance. National Journal of Multidisciplinary Research and Development, 2, 3. 530-532.
[7] Heitink, M., Voogt, J., Fisser, P., Verplanken, L & Van Brak, J., (2017). Eliciting educators' technological pedagogical knowledge. Australasian Journal of Educational Technology,33,3.
[8] Herrera-Payo, M.A. (2021). Collaborative learning for virtual higher education. Learning, culture and social interaction, 28.
[9] Hidayah, B., Na'im, M., & Puji, R.P.N., (2020). Technological content knowledge of history educators in Jember. IOP Publishing.
[10] Jandrić, P., Hayes, D., & Truelove, I., (2020). Teaching in the Age of Covid-19.

Postdigit Sci Educ 2, 1069–1230.

[11] Janssen, N., Knoef, M., & Lazonder, A. (2019). Technological and pedagogical support for

[12] preservice teachers' lesson planning.

[13] Jing, J., & Chen, L. (2019). Scaffolding Theory Research Based on Multimodality. Advances in Economics, Business and Management Research, 110.

[14] Joseline, M., Santos, Rowell, D.R., and Castro. (2021). Technological Pedagogical content knowledge (TPACK) in action: Application of learning in the classroom by pre-service teachers (PST). Social Science and humanities open,3.

[15] Kasradze, T., & Gulua, E. (2021). Challenges and Opportunities for Teaching Practical Skills at Higher Education Institutions under the conditions of COVID-19 Pandemic. European Journal of Social Science,8,1.

[16] Kukard, K. (2020). Creating a collaborative learning environment online and in a blended history environment during Covid-19.

[17] Kurt, S. (2018). "TPACK: Technological Pedagogical Content Knowledge Framework. Educational Technology.

[18] Medwell, J., & Lei, M. (2021). Impact of the COVID-19 pandemic on student educators: how the shift to online collaborative learning affects student educators' learning and future teaching in a Chinese context. Asia Pacific Education Review, 22,169–179.

[19] Mishraa, L., Gupta, T., & Shree, A., (2020). Online teaching-learning in higher education during lockdown period of COVID-19 pandemic. International Journal of Educational Research Open.

[20] Morgan, H. (2020). Best practices for implementing remote learning during a pandemic. The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 93(3), 135–141.

[21] Mulyadi, D. (2020). Technological Pedagogical and Content Knowledge of ESP Teachers in Blended Learning Format. iJET, 15, 6.

[22] Mutiani, Supriatna, N., Abbas, E.W., Rini, T., & Subiyakto, B. (2021). Technological, Pedagogical, Content Knowledge (TPACK): A Discursion in Learning Innovation on Social Studies. The innovation of social studies journal,2,2.135-142.

[23] OECD. (2020). The impact of COVID-19 on student equity and inclusion: supporting vulnerable students during school closures and school re-openings.

[24] Paudel, P. (2021). Online education: Benefits, challenges and strategies during and after

[25] COVID-19 in higher education. International Journal on Studies in Education (IJonSE), 3(2), 70-85.

[26] Rambe, P., Ndofirepi, T. M., & Dzansi, D.Y., (2015). Influence of Entrepreneurial Education and Technological Creativity on Entrepreneurial

ISSN 2601-8616 (print)
ISSN 2601-8624 (online)

European Journal of
Education

January – June 2022
Volume 5, Issue 1

Intentions of Students in Zimbabwe: A Theoretical Perspective. European Conference on European Conference on Innovation and Entrepreneurship - ECIE 2015, University of Genoa, Italy.

[27] Rapanta, C., Botturi, L., Goodyear, P., Guardia, L., & Koole, M. (2020). Online University Teaching During and after the Covid-19 Crisis: Refocusing Teacher Presence and Learning Activity. Post Science and Education,2, 923-945.

[28] Ruarte, D.E. (2019). Effective Pedagogies for Online Learning. Research Gate.

[29] Sumitra, P., & Roshan, C. (2021). A Literature review on impact of COVID-19 Pandemic on teaching and learning. Higher education for the future,8, 133-141.

[30] Umaralieva, M. (2021). Some challenges in encouraging independent learning. Academic research in educational sciences, 2, 4.

[31] Van Leendert, A., Doorman, M., Drijvers, P.,·Pel, J., & Van der Steen, J. (2021). Educators' Skills and Knowledge in Mathematics Education for Braille Readers. Technology, Knowledge and Learning.

[32] Wahab, A. (2020). Online and remote learning in higher education institutes: A necessity in light of COVID-19 pandemic. Higher education studies, 10, 3.