#### The Use of Technology to Overcome Transitional Challenges of First Year Students From Face-to-Face to Online

Munienge Mbodila, Walter Sisulu University, South Africa

The Paris Conference on Education 2022 Official Conference Proceedings

#### Abstract

Universities around the world and South Africa in particular have been involuntary forced to transit from face-to-face to online learning and teaching as a result of the nationwide lockdown due to the coronavirus pandemic (COVID-19). Online learning and teaching is classified as the use of digital technology to deliver tuition in synchronous mode, meaning allowing live interaction between the teacher and the learners or asynchronous mode which is basically delays in time of delivery between teacher and learners. However, numerous challenges hinder First Year Students in transiting to the online platform to realising the full potential of e-learning, especially those from disadvantaged schools background considered as under prepared, educationally underprivileged and had little or no access and skills to technology usage prior to their enrolment at the university. This paper introduced a module called First Experience Computer Literacy (FeCOL) to facilitate students transition from face-to-face to online platform at the university. The main objective of this study was to provide students with basics training skills needed in terms of technology-related used to enable them to engage and participate effectively in the online platform. Data was collected among a group of first year students in the department of information technology systems in one rural institution in South Africa. The results show that the majority of learners have not used computers or had experience on technologies for teaching and learning in their previous schools. However, learners showed interest on basic IT training in terms of hardware functionality and software application to assist them carry out their academic tasks effectively. The study proposed that FeCOL should be used as a kick-start module to facilitate first year learners' transition from face-to-face to online.

Keywords: Online Teaching, E-Learning, Educational Technology, First Year Experience

# iafor The International Academic Forum www.iafor.org

#### **Introduction and Background**

Universities around the world and South Africa have been involuntary forced to transit from face-to-face to online learning and teaching because of the nationwide lockdown due to the coronavirus pandemic (COVID-19). Online learning and teaching are classified as the use of digital technology to deliver tuition in synchronous mode, meaning allowing live interaction between the teacher and the learners or asynchronous mode which is basically delays in time of delivery between teacher and learners. First-year students, particularly those from underprivileged schools' backgrounds who are underprepared, educationally underprivileged, and had little to no access to and skills with technology usage prior to their enrolment at the university, face numerous obstacles when transitioning to the online platform to realize the full potential of e-learning. Many of these students come from underprivileged rural settings, as a result their transfer into higher education has been negatively impacted because it is a difficult process that calls for learning new skills and adjusting to new academic and social environment. The disruption of schools during the outbreak of COVID-9, affected how we interact socially, and face-to-face activities were stopped and moved online (Pokhrel & Chhetri, 2021). The pandemic's severe repercussions are particularly noticeable in education especially contact schooling. The pandemic poses an opportunity and a problem for education, particularly in under resource institutions in Africa. The COVID-9 has distrusted traditional learning method also called face to face and prompted a shift to online teaching and learning activities (Daniel, 2020). Many higher education institutions have had to revaluate their methods of instructions and evaluation in the wake of the pandemic. According to Allen, Rowan, and Singh (2020, p.233), this fast transition "has led to greatly intensified workloads for teachers as they strive to not only migrate instructional content and materials into online platform, but also become skilled in navigating the needed software." The sudden and unanticipated switch to online learning also presented issues and obstacles for students especially those in their face year of study at university (Baticulon et al., 2021).

There is not much that is known about how prepares students are for real time online learning (Tang et al., 2021, Mbodila et al., 2016). According to the literature, transition is typically voluntary or planned on online teaching and learning, however, emergency transition, like the ne caused by the covid-19 pandemic, have a relatively small body of knowledge (Songca et al., 2021; Mbodila et al., 2016; Garca-Penalvo, Corell, Rivero-Ortega, Rodrguez-Conde, & Rodrguez-Garca, 2021). This study, intended to investigate how this transition affected first year student considering this being their first time to university and most of them novice in the use of online learning and teaching. Recent studies have indicated that a sizable proportion of students in higher education institutions have at least some challenges throughout their period of transition, but they also call for a multifaceted response from each individual confronting varied changes (Tang et al., 2021, Mbodila et al., 2016).

Studies have indicated that a sizable proportion of students in higher education institutions have at least some challenges throughout their period of transition, but they also call for a multifaceted response from each individual confronting varied changes (Mbodila et al.,2016). Various studies emphasized that the process could be experienced differently for each individual undertaking and contends that both high school performance and socioeconomic background have a direct impact on how well students integrate into university life (McInnis et al.,1995; Australian Government Publishing Service, 1995; Melbourne: Centre for the Study of Higher Education, 1996). According to a study done by Kauffman (2015), students perceive online course differently than traditional courses. Considering the above argument by Kauffman (2015), it is evident that face-to-face activities are different from online

activities, hence for new students there is a need for them to be prepare for these new changes. In this context it is significant to understand how the new introduced module (FeCOL) assists first year students in their transition from face-to-face to online platform at the university.

## Literature Review

Digital literacy can be defined as the ability to retrieve and use information effectively through platforms such as search portals, databases, and related applications (Buckingham, 2010). In 21st century, students need to be inspired and prepared to acquire lifelong knowledge and skills in the learning environment as the world is advancing toward a technological driven society. Amongst this knowledge or soft skills, digital literacy is one of them. Long-term development is required for the concept of digital literacy to be understood and taken into consideration in school system all over the world. The COVID-9 pandemic has distrusted traditional learning method also called face to face and prompted a shift to online teaching and learning activities (Daniel, 2020). Many higher education institutions have had to reevaluate their methods of instructions and evaluation in the wake of the pandemic. Currently the use of modern technologies has changed and keep on changing the way we conduct businesses, live, communicate, work as well as the way the education is being conducted. Online learning and teaching are classified as the use of digital technology to deliver tuition in synchronous mode, meaning allowing live interaction between the teacher and the learners or asynchronous mode which is basically delays in time of delivery between teacher and learners. It is known in the literature that online learning offers a learning setting that is different from face-to-face or classroom learning settings (Bazelais, Doleck, & Lemay, 2018). In terms of education, this abrupt change "has dramatically increased staff responsibilities as they struggle to not only migrate instructional content and resources into the online domain, but also become sufficiently skilled in navigating the needed software" (Allen, Rowan, & Singh, 2020, p. 233). Additionally, students had a tough time adjusting to the sudden, unannounced switch to online schooling (Baticulon et al., 2021). According to a study by Mbodila et al., (2016), 95% of students in rural university settings shown shortcomings in using technology for teaching and learning. While many of these universities have made significant investment and placed great value in enhancing teaching and learning using technology, it has been reported that the main barrier to providing students with digital literacy skills necessary for 21<sup>st</sup> century learning is a lack of critical technical skills and embracing e-learning innovation in basic education levels (Jantjies and Joy, 2016). This paper introduced a module called First Experience Computer Literacy (FeCOL) to facilitate students transition from face-to-face to online platform at the university. Hence, this study presents a developed module called FeCOL that assist students in fundamental use of technology to overcome transitional challenges of First Year Students from Face-to-Face to online.

## Theoretical Framework to the study

This current study is framed on role-model theory, which was first put forth by Murphy et al., (2001). The adoption of this model was done in the context of this study to encourage student-student contact, particularly on a socio level, to foster a sense of belonging (Tinto, 1675). To make is possible students to interact in a way that would allay their worries while promoting structured learning in the process. In core, it was to empower students to participate in a relationship that would eliminate fears but encourages free learning practices (Mbodila et al., 2016).

#### **Study Context**

The South African higher education system serves as the case study's context. Due to institutions' disparate geographic locations, levels of resources, and cultural, racial, and political histories, there is a great deal of institutional inequality in South Africa (Leibowitz et al., 2015; Leibowitz et al., 2017). Many universities, including the current case study institution, cancelled face-t0-face lessons in response to the covid-19 pandemic and moved to online to continue tuition while keeping staff and students safe during the period of lockdown. According to the Higher Education Act 101 of 1997, as modified, the institution under case study was founded on July 1, 2005, because of the amalgamation of the previous Border Technikon, Eastern Cape Technikon, and University of Transkei. WSU has four campuses, each of which is run by a Campus Rector, and it is governed and managed by divisions (Songca et al., 2021). The four campuses are dispersed across four far-flung places in the South African Eastern Cape province: Mthatha, Butterworth, Buffalo City, and Komani (formerly Oueenstown). The current study was conducted with a group of students at Komani Campus. Given its rural location, the institution is located the institution attract most black student from disadvantage background and schools. Challenges such as the use of modern technology, computer skills, and many others are amongst the major obstacle faced by many academics and students to integrate fully in an online platform (Songca et al., 2021). Prior covid, students use to have a kick start training on computer literacy, however, during lockdown there was not contact training for student. To overcome these challenges, an introduction of a new module (FeCOL) was created to assists first year students in their transition from face-to-face to online platform at the university.

## Methodology

This study employed quantitative approach model to collect data from students. According to Prensky (2001), quantitative approach involves the description of events using statistical data and mathematically based analysis. For data collection, an online questionnaire was developed with semi-structures questions and opinion statements was used to collect data. Each question was designed to elicit information about how students have been using technology and computer devices, their experiences on the use of computer application and software, their skill levels as well as training needs as they are transiting from high school to university. The aims of these questions were to identify the gaps and see how to put in place mechanism that will assist them in their transition. The link was sent to the participants and data collected were analyzed and presented in this paper.

## General Distribution of respondents and previous school attended

An online survey was completed by the participants and their responses were gathered and presented in this section. The completion of the online survey was entirely optimal and anonymous. the total number of Participants were N=79 first year students from the department of information technology systems in the university under case study. The distribution of participants analyzed and presented in the below section. As shown in figure 1, the distribution in term of gender. The majority of respondents are female about 53.2% and male are 46.8%.



Figure 1: General Distribution of Respondents

Further there was a need to find out their provinces of previous high school attended before joining the university. Figure 2 shows that the majority of students attended schools in rural settings about 59% villages, 5% in informal settlement, 3% farm or small holding and 22% townships attended townships schools. This shows that a total of 89% of students attended rural schools which is characterizes by disadvantages and under resources. Only a small portion of students attended schools in town 5%, suburb 5% and inner city 1%. These findings shows that the majority of first year student at the institution comes from rural settings and this have a direct impact in their transition from face-to-face to online since most of these schools are under resources.



Figure 2: Previous High S0chool Attended

The researcher further decided to elicit information on the participants familial educational background in terms of "generations" to discover more meaning information about the learners. Figure 3 shows that, the majority of these student were first "generation students" in their families to attend university or college (Mbodila et al.,2016; Lowe-McConnell, 2002). In this context first generation refers to students whose parents or family members have never attended college or university (Lowe-McConnell, 2002). These students are more likely than average to drop out of school and academic support in their family is likely to be low. Hence, there was a great need to support them in transiting from face-to-face to online teaching and learning.



Figure 3: Family Educational Background

#### **Results and Data Analysis**

The researcher goes on to determine whatever technologies the participants have or have been utilized based on the results of the educational and family background. This is seen in Figure 4, which shows that the most of them were owning a smartphone about 92.4%.



It makes sense that the participants ability of owing a smartphone would make them able to access the internet and some application that are used on a smartphone. This indicate that student had knowledge of the use of internet as shown in figure 5, whereby participants have indicated with about 56% of them have previous training on internet usage.



Figure 5: Previous Training on Computer Application Software

#### Technology Usage and skills in the Context of Learning and Teaching

Students were questioned regarding their training prior university on the use of computer and various application for learning and teaching in order to determine their strength and shortcoming in the use of modern technology in process of learning and teaching. The purpose of this question was to give the research an idea wat what is needed for these students to be reading in their transition. Figure 6 shows the findings.



Figure 6: Previous Computer Training

About 77.2% of participant responded that they never had a computer training or a form of computer literacy training prior their admission at the university. Only 22.8% responded positive in this question. The use of computer was the crucial for this student transition from face-to-face to only teaching, however this was not possible since a big number of them were not trained in the usage of computer for the purpose of teaching and learning. Any LMS integration was going to be in their disadvantage. This question was giving a full view of student's profile in technologies related knowledge and skills to give the research an idea of the type of students that the institution has and the type of intervention that can be put in place to assist them adapting quick during covid-19 pandemic transition.

In order to provide necessary support to assist students in the transition during Covid-19 pandemic in the use of technology to overcome their transitional challenges from Face-to-Face to online, a question to determine their training needs and the type of training needed was vital for the research to come up with a proposed design for the module or a model for the intervention. A question on the type of training that they would like to have been asked and figure 7 displayed the results.



Figure 7: Training Needed for Students

The finding indicated that 67.1% of the participants, would like to be trained in everything related to computer, internet, and software. 19% of them would like to be trained on Microsoft office package such as excel, word, PowerPoint etc. 11% of the participant would like to be trained on the use of technology for teaching and learning. These responses give the research an idea of the type of support that can be developed by the institution to assist these types of learners before starting online classes. According to the finding, participants showed interest on basic training in term of computer and software to help them carry out their studies effectively online.

## Proposed First Experience Computer Literacy Module (FeCOL)

According to the study done by Mbodila et al., (2016) at UNIVEN, it shows that about 95% of first year students in that institution indicted interest in computer literacy training to get them integrated into the university technology-based system. The same study revealed that the majority of these students were coming from rural settings schools which was under resources. The researcher in that study proposed FeCOL module a way to mitigate first year integration into technological related module at the institution. However, the proposed designed was never tasted or implemented to see its effectiveness in assisting students to overcome their technological challenge in their transition.

Looking at the finding of this current study, from figure 1 to 7, the percentage of respondents came from various high schools in rural settings that are under resources. In addition to that, a large percentage of these participants are first member of their family enroll to the university. Looking at the settings of both universities and the type of student that they admitted, there is quit a similarity. Hence, its was important to adopt the same proposed module (FeCOL) as an intervention to assist students overcoming their transitional challenges from face to face to online learning and teaching during covid-19. The components and design of the proposed module is presented in figure 8 and elaborated in detail in the following section.



Figure 8: FeCOL Module Components (Mbodila et al., 2016)

The designed FeCOL module was therefore implemented to assist first year students and was divided in three components, namely: introduction to computers, introduction to application software, introduction to technological tools for teaching and learning. As shown above inf figure 8, the design of the module in the context of the university under case study reflect as a kick start computer literacy module that carter for fundamental student's needs and an introduction to technological tools used for research, teaching, and learning, as well as the

campus intranet, were combined to create the course materials for WiSeUp (Mbodila et al.,2016).

## Student feedback on Experience Computer Literacy Module (FeCOL

Following the intervention, there was a need to find out student satisfaction on the intervention after the training that was during online classes. The aims of this feedback were to determine if the intervention that was put it in place was effective and helpful for students to overcome challenges during this transition from face-to-face to online learning and teaching during Covid-19. Figure 8 shows participants feedback on their level of satisfaction.



Figure 9: Students Feedback

As its can be seen from above figure, first year students were satisfied in the intervention and indicated them ever of agreement. About 75% of participants strongly agree that the intervention assisted them to overcome basic challenge in adjusting from face to face to only. And 25%, agreed that also in that. This shows that the level of satisfaction from students were good, and this shows a positive attitude for the side of the students.

## Conclusion

This paper assesses first year students' usage and knowledge on their computer related skills to introduce a module called First Experience Computer Literacy (FeCOL) to facilitate students transition from face-to-face to online platform at the university. The main objective of this study was to provide students with basics training skills needed in terms of technology-related used to enable them to engage and participate effectively in the online platform. From the data that was collected its shows that first year students have challenges in computer related skills and usage of modern technology due to their educational background prior university. These students were surveyed and their profiled were gathered to determine their readiness in overcoming transitional challenges during covid-19. The results shows that most of these students were coming from rural school with little or no technological training and support. To assist them in the use of technology to overcome transitional challenges from Face-to-Face to online during Covid-19, FeCOL was introduced, and students were satisfied in the support that they received. It is event that this module will be use beyond the pandemic, to assist student who have difficulty to adopt modern technology usage in learning and teaching at the case study institution.

#### References

- Allen, J., Rowan, L., & Singh, P. (2020). Teaching and teacher education in the time of COVID-19. Asia-Pacific Journal of Teacher Education, 48(3), 233–236. https://doi.org/10.1080/1359866x.2020.1752051.
- B. Jones, G. Coetzee, T. Bailey and S. Wickham, "Factors that facilitate success for disadvantaged students: An investigation into approaches used by REAP, NSFAS and selected higher education institutions", Cape Town: REAP, 2008
- Baticulon, R., Sy, J., Alberto, N., Baron, M., Mabulay, R., Rizada, L., et al. (2021). Barriers to online learning in the time of COVID-19: A national survey of medical students in the Philippines. Medical Science Educator, 31(2), 615–626. https://doi. org/10.1007/s40670-021-01231-z.
- Bazelais, P., Doleck, T., & Lemay, D. J. (2018). Investigating the predictive power of TAM: A case study of CEGEP students' intentions to use online learning technologies. Education and Information Technologies, 23(1), 93–111. https://doi.org/10.1007/ s10639-017-9587-0.
- Buckingham, D., 2013. Is there a digital generation?. In Digital generations (pp. 13-26).
- C. McInnis, R. James, and C. McNaught. (1995) First year on campus: diversity in the initial experiences of Australian undergraduates. Canberra: Australian Government Publishing Service, 1995
- Daniel, S. (2020). Education and the COVID-19 pandemic. PROSPECTS, 49(1–2), 91–96. https://doi.org/10.1007/s11125-020-09464-3.
- Jantjies, M. and Joy, M., 2016. Lessons learnt from teachers' perspectives on mobile learning in South Africa with cultural and linguistic constraints. South African Journal of Education, 36(3).
- Leibowitz, B., Bozalek, V., Farmer, J., Garraway, J., Herman, N., Jawitz, J., Mc Millan, W., Mistri, G., Ndebele, C., Nkonki, V., Quinn, L., Van der Merwe, S., Vorster, J. & Winberg, C. (2017). Collaborative Research in Contexts of Inequality: The Role of Social Reflexivity. Higher Education, 74, 65-80. https://doi.org/10.1007/s10734-016-0029-5
- Leibowitz, B., Bozalek, V., James, G., Nicoline, H., Jeff, J., Muhuro, P., Ndebele, C., Quinn, L., Van Schalkwyk, S., Vorster, J-A. & Winberg, C. (2017). Learning to teach in higher education: An investigation into the influences of institutional context on the professional learning of academics in their role as teachers. Pretoria: Council on Higher Education.
- Lowe-McConnell, R.H., "Cichlids all! With an ecological view of African cichlids". Environ. Biol. Fish. 63(4):459- 463, 2002.

M. Prensky, "Digital Natives, Digital Immigrants: Part 1". On the Horizon, 9(5), 1-6, 2001

- Munienge Mbodila, Isong Bassey, Muhandji Kikunga, Langutani Masehele,"On Overcoming Transitional Challenges of First Year Students in Technology-Based Educational Settings", International Journal of Modern Education and Computer Science (IJMECS), Vol.8, No.11, pp.28-35, 2016.DOI: 10.5815/ijmecs.2016.11.04
- M. Peel, "Studying the Transition from year 12 to the first year of Higher Education", (1996) Proceedings of the 2nd Pacific Rim Conference on the first year in Higher Education, Melbourne: Centre for the Study of Higher Education, 1996
- RoutledgePokhrel, S., & Chhetri, R. (2021). A literature review on impact of COVID-19 pandemic on teaching and learning. Higher Education For The Future, 8(1), 133–141. https://doi.org/10.1177/2347631120983481
- Songca, R.N., Ndebele, C. & Mbodila, M. (2021). Mitigating the Implications of Covid-19 on the Academic Project at Walt er Sisulu Universit y in Sout h Africa: A Proposed Framework for Emergency Remot e Teaching and Learning. Journal of Student Affairs in Africa, 9(1), 41-60. DOI: 10.24085/jsaa.v9i1.1427