NIU Journal of Humanities Copyright©2023
Nexus International University ISSN: *3007-1704*; 8(3): 79–85

Pedagogy and Technical Implication of Blended Learning in Obafemi Awolowo University Centre for Distance Learning, Nigeria

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Abstract. The study examines pedagogy and technical implication of blended learning in Obafemi Awolowo University Centre for Distance Learning. The research design method used for this study was survey research methods. The population of the study comprises of Two hundred and fifty (250) registered nursing students for 2021/2022 academic session at Obafemi Awolowo University Centre for Distance Learning programmes. The sample size of One hundred and fifty-two (152) respondents was selected through the Krejcie and Morgan sampling techniques to select the sample size from the population. The returned rate of the instrument used to elicit the data from the respondents was 142(93.42%). The instrument used to collect data was questionnaire. This questionnaire was designed on a scale of 4 points Likert. The validity of the instrument was done and the reliability of the instrument was tested through the use of Cronbach Alpha reliability tools to determine the internal consistency of the instrument. The instrument revealed a coefficient of 0.702 which is acceptable. The method of data analysis used was analysis of variance (ANOVA) statistics to test the research hypotheses. The statistical package for social sciences (SPSS) was used to analyse the data. The findings revealed learners technology skill (N = 142; F = 3.543; P = 0.016 @ 0.05).Teaching flexibility (N = 142; F = 0.908; P = 0.439 @ 0.05). Learner self-efficacy (N = 142; F = 0.277; P = 0.842 @ 0.05). Personal commitment (N = 142; F = 2.220; P = 0.089 @ 0.05) are positively significant with the technical implication of blended learning. Hypothesis one was rejected while other hypotheses were sustained. The implication was that learners portrayed certain IT skills which ease their understanding of blended learning. The study therefore recommended that the tertiary institution stakeholders should fund blended learning for both teachers and students. Also, build a supportive technological environment and creating a technical hub for students will lower education costs and promote academic advancement.

Keywords: Pedagogy, Technical Implication, Blended Learning and Distance Learning.

1. Introduction

The earliest educational delivery mode is traditional face-to-face, hosted in a specific educational setting, and distinguished by physical interaction between teachers and students or instructors and learners. However, technology advancements, rising applicant numbers, challenges related to limited educational access, a focus on refresher training for the working class to keep up with changing knowledge requirements, and the need to keep up with occupational challenges have sparked new ideas among those involved in education about new trends in educational delivery. Therefore, e-learning is a formalised teaching-based learning system that makes use of electronic resources that is primarily based on using computers and the internet. Though, the teaching can also occur face-to-face or outside the formal classroom settings.

Therefore, the term blended learning could be expressed as a combination of in-person and online instruction that frequently referred to as the "new traditional model" of course delivery (Dziuban, Graham, Moskal, Norberg & Sicilia, 2018). It is widely used in higher intitutions, and their inability to monitor a cutting-edge practice that frequently emerged has made it challenging to track the extent of its growth accurately. In an early national study sponsored by the Sloan Consortium, about 65.2% of participating higher educational institutions offered blended learning. The government, curriculum planners, school administrators, teachers, and students all worked together to produce learning as a result of their combined efforts. Thus, learning is blended

because it uses a variety of resources, including community-based learning objects, corporately annexed school environments, and human personnel.

The technical implications of blended learning are the challenges faced by the users shift from face-to-face to blended learning is the genuine route that the evolution of blended learning follows a path of abrupt departure from full e-learning mode (Oyeleke, Olagunju, Ayamolowo & Aribaba, 2014). The availability and skill to use these technologies to support learning in a virtual environment are implied by the term "technological trilby." Thus, blended learning gets its name because technology is used to deliver education in this method. This is the core of online learning which sets it apart from more conventional face-to-face instruction. The technology used in e-learning includes electronic communication tools like computers, the internet, intranet, remote evaluation applications, adaptation tools, learning management systems (LMS), and course management systems (Alina, 2007; Oyeleke, et al., 2014).

They further expressed that technology is essential to the success of blended learning, but it also has the potential to stimulate a learner-centered approach that can alter instructors' and students' paradigms. Students take the initiative and develop their learning capacity that can reasonably control their learning outcomes. Effective curriculum planning and design, as well as instructional strategies that differ slightly from those used in face-to-face instruction, are required for effective pedagogy. Because of the unique characteristics and diversity of online students, blended learning should keep in mind that e-learning is not just about technology but a complete transformation of the teaching and learning process using technology and applying relevant learning theories. Therefore, the study examines pedagogy and technical implication of blended learning in Obafemi Awolowo University Centre for Distance Learning. This study is delimited to nursing students registered for 2020/2021 academic session of the programme.

1.2 Problem Statement

Despite the development of new educational technologies, access to these educational innovations remains a problem (Dziuban, Graham, Moskal, Norberg & Sicilia, 2018). One of the potentials of blended learning technologies is that they can expand access for nontraditional and underserved students by providing a wealth of educational resources and opportunities to those with limited access to higher education available on campus. Adu, Eze, Salako, and Nyangeechi (2013) expressed that students from low socioeconomic backgrounds are likely to pursue higher-level postsecondary degrees. However, expanding distance learning has given millions of educational opportunities (Allen et al., 2016). A recent focus on distance learning has also led to significant cost savings without compromising student performance outcomes (Robinson et al., 2014).

Therefore, blended learning techniques are fundamental in teaching and learning processes. Though, the differences can be attributed among other things to differentiate institutional approaches. The problems of technical and technological support, logistical issues, national and subnational overriding policies on pedagogy cannot be overemphasised (Fischer et al., 2015). The technological challenges posed to students from the used of blended learning needs to be understudy. The technical implications of internet connectivity, video conferencing capabilities, web conferencing, television, radio, an electric power supply, an alternative power supply to compensate for an erratic power supply, a computer, and other learning technologies are encompassed (Hilton et al., 2016). Therefore, the question is does learner technological skills influence the blended learning pedagogy? Is self-efficacy solely affected the teachers, the students, or both of them? Is teaching flexibility solely affect the blended learning? To understand the differences, this study sought to examines pedagogy and technical implication of blended learning in Obafemi Awolowo University Centre for Distance Learning. The establishment of part-time degree programs at first-generation universities like the Obafemi Awolowo University is considered as a scope which delimited to nursing degree programme.

1.2 Purpose of the Study

The study examines pedagogy and technical implication of blended learning in Obafemi Awolowo University Centre for Distance Learning. The specific objectives are:

- to assess the influence of learner technological skills on blended learning
- to evaluate the efficiency of teaching flexibility on the usage of blended learning
- to investigate the influence of learner self-efficacy on blended learning
- to assess the influence of personal commitment of learner on blended learning

1.3 Research Hypothesis

- Learner technological skills do not have influence on blended learning in pedagogy
- Teaching flexibility does not influence the usage of blended learning
- Learner self-efficacy does not have significance influence on blended learning
- Personal commitment of learner does not have significance influence on blended learning

2. Literature Review

Olugbeko and Izu (2013) found that e-learning techniques that are mostly adopted by most of the Nigerian institutions are in the form of prepared lectures on a CD-ROM that can be played as needed" in the case of Nigerian higher education institutions. This was taken place because there need to be more computers to accommodate all the students, which makes the online learning process less interactive. Additionally, most students come from families with lower socio-economic status and need more experience with or exposure to ICT solutions. This obviously implies that they do not always have access to a computer and the internet at home during their studies. Because of this, students were forced to choose public internet cafés, which also struggle with low bandwidth and hinder the country's ability to implement e-learning effectively.

In Nigeria, open and distance learning needs to be embraced in adopting e-learning as a substitute for imparting educational instruction. However, the study by Mtebe and Raphael (2013) claimed that higher education in Tanzania used blended learning and that, due to limited and slow internet speed, compact disk (CDs) video player was found to be a useful as an alternative approach to learning resources. As a result, face-to-face teaching methods are still in use, and blended learning programs are only seen as tools for enhancing educational activities. In the same vein, the Open University of Tanzania (OUT) instructors use blended learning tools like computers and internet technology for teaching, looking up educational resources, communicating (staff email system), and setting exams rather than creating study materials and giving presentations to students (Nyandara, 2012). Similarly, it has been noted that students find it difficult to access the internet because doing so inside and outside university learning centres comes with a hidden fee which propelled the Sokoine University of Agriculture (SUA) to implement Moodle software.

Learning Management System (LMS) is one of the blended learning tools made to implement and support e-learning systems. Additionally, an e-learning program has been put in place by tertiary institutions to make the research and learning processes easier for professors and students (Nagumwa & Lwoga, 2012). The lack of sufficient computers and other ICT resources, such as the internet, prevents the full implementation of the e-learning system, which is why not all students and staff can use it simultaneously. Due to some difficulties, tertiary institutions introduced the e-learning system in 2011 but it was unsuccessful. As a result, both blended learning and face-to-face approach was employed (Oyeleke, et al., 2014).

Shea and Bidjerano (2016) asserted that African American community college students who took distance education courses completed degrees at a significantly lower rate than those who did not take distance education courses. On the other hand, a study of K–12 online learning success factors discovered that only 1 out of 15 courses for ethnic minorities had significant gaps in student test scores (Liu & Cavanaugh, 2011). To better understand how different populations can learn in various modalities, including face-to-face and blended learning environments, more research is needed. Floridi (2014) opine that the world has evolved into an "infosphere" in which we live as "inforgs." What is real for us is changing from the tangible and immutable to the things we can communicate through pedagogy.

Qureshi et al. (2012) found that Pakistani university identified the difficulties in implementing e-learning. The difficulties with technology, including access to the most recent technology, a quick internet connection, and a steady electricity supply, are listed. Other issues include maintenance, administration, security, a lack of technical support, and limited student computer access, both on campus and at home. This is because it is difficult for students to accept and use e-learning technology. After all, most families in developing nations do not have direct access to computers. The existing knowledge of computer technology and the general understanding of e-learning technology encourage students and other learners to participate in e-learning; otherwise, there will be high resistance to changing from traditional education methods. Thus, e-learning implementation in developing countries is generally hindered by a lack of ICT expertise and inadequate ICT infrastructure.

Donovan, Bransfood and Pellegrino (1998) observed that teachers must have a high level of expertise when teaching the students with blended learning to help them truly understand the concepts. It takes time to acquire the level of expertise a teacher needs to ensure that their students comprehend. Odey and Odey (2019) add that one might question whether the high failure rates and poor quality of the students are not a reflection of the instructional quality in the schools given the observed decline in the pedagogy, attitude, and value of students. Little research has been done to understand the impact of routine classroom experiences on the development of learners self-efficacy, and thus potentially on their effort and success in class. Despite the promise that the self-efficacy theory shows for understanding retention and achievement patterns in education settings (Fencl, 2004).

In various pedagogical studies, self-efficacy, or the conviction that a learner can succeed in a particular task, is an effective predictor of behaviours like perseverance and success, as well as of which behaviours are attempted or avoided. The study looks at how classroom elements like teaching methods and the atmosphere in the classroom affect students' sense of self-efficacy. With 121 undergraduates in the first semester as the population, the study employs surveys of research design methods. On outcome variables like self-efficacy, students in sections with various teaching methods performed significantly better than students in the conventional section. When individual strategies were examined, the strongest associations were discovered between climate factors and all sources of efficacy and cooperative learning strategies (Fencl, 2004).

3. Research Methodology

The research design method used for this study is a survey research. The population of the study comprises of Two hundred and fifty (250) registered nursing students for 2021/2022 academic session at Obafemi Awolowo University Centre for Distance Learning programmes. The sample size of One hundred and fifty-two (152) respondents was selected through the Krejcie and Morgan sampling techniques to select the sample size from the respondents. The instrument used to collect data was questionnaire designed on a scale of 4 points Likert. The questionnaire was validated and the reliability of the instrument was tested through the use of Cronbach Alpha reliability tools to determine the internal consistency of the instrument. The instrument revealed a coefficient of 0.702 which is acceptable. The method of data analysis used was analysis of variance (ANOVA) statistics to test the research questions. The statistical package for social sciences (SPSS) was used to analyse the data.

4. Results

The table below shows the schedule of the questionnaire administered and the percentage of the returned questionnaire.

Table 1: Schedule of the Questionnaire Administered and Returned

SN	Number of Distributed Questionnaire	Number of Returned Questionnaire	% of Returned Questionnaire
1	152	142	93.42%

SOURCE: *Researcher Design (2023)*

Test of Research Hypotheses

$H0:_1$ Learner technological skills do not have influence on blended learning in pedagogy

Table 2: The ANOVA Analysis of Hypothesis One

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10.351	1	3.450	3.543	.016
Within Groups	134.389	140	.974		
Total	144.739	141			

Table 2 shows the ANOVA analysis that was carried out to check the mean influence of the variables. The table also portrays the ANOVA results used to test the significance of the variable with an *F-statistics* of 3.543. The results displayed the *p-value* of 0.016 of the variable which is less than 0.05 thresholds. Therefore, since the *p-value* is less than 0.05 level of significance, it was inferred that there is positive significance influence exists between the variable understudy. Thereby, the null hypothesis which states that learner technological skills do not have significance influence on blended learning in pedagogy is hereby rejected. The findings revealed that the majority of nursing

students sampled have technological skills to set up the blended learning which enable to understand the blended teaching and learning processes.

$H0:_2$ Teaching flexibility does not influence the usage of blended learning

Table 3: The ANOVA Analysis of Hypothesis Two

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.120	1	.707	.908	.439
Within Groups	107.429	140	.778		
Total	109.549	141			

Table 3 displays the ANOVA result that was conceded to check the mean influence of the variables. The table also depicts the significance outcome of *F-statistics* of 0.908 with the *p-value* of 0.439 respectively. Thus, the *p-value* is greater than 0.05 level of significance which means that the significance level exists between the variables are varied. Thereby, the null hypothesis which states that teaching flexibility does not influence the usage of blended learning is hereby sustained. Therefore, this implies that the flexibility of teaching through blended pedagogy does not affect the understanding of the lesson. Though, this may not guarantee that there are no other factors impeding the pedagogical flexibilities in attending their virtual lectures.

$H0:_3$ Learner self-efficacy does not have significance influence on blended learning

Table 4: The ANOVA Analysis of Hypothesis Three

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.837	1	.279	.277	.842
Within Groups	139.029	140	1.007		
Total	139.866	141			

Table 4 depicts the analysis of variance of the hypothesis three which describes the significance outcome of the variable with the *F-statistics* of 0.277 and the fallout of the *P-value* of 0.842 respectively. This shows that the variable is positively significant. Meanwhile, the p-value of 0.842 is greater than 0.05 level of significance. Thus, the hypothesis which says learner self-efficacy does not have significance influence on blended learning is hereby sustained. This implies that learner capacities can be executed through their individual beliefs. Though, some of them may lack certain skills preventing them from executing the blended learning adequately.

$H0:_4$ Personal commitment of learner does not have significance influence on blended learning

Table 5: The ANOVA Analysis of Hypothesis Four

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.909	1	1.636	2.220	.089
Within Groups	101.746	140	.737		
Total	106.655	141			

Table 5 shows the analysis of variance result of the variable articulated the *F-statistics* of 2.220 with the significance value of 0.089. The result shows that the P-value is greater than 0.05 significant level. Therefore, the null hypothesis which assumed that personal commitment of learner does not have significance influence on blended learning is hereby sustained. This infers that learners' commitment can justify the efficiency of blended learning adopted in school.

5. Discussion of Findings

The finding of hypothesis one supported the submission of previous scholars like Olugbeko and Izu (2013); Mtebe and Raphael (2013), they claimed that tertiary institutions used blended learning and that, due to limited and slow internet speed, compact disk (CDs) video player was found to be useful as an alternative approach to learning resources. This implies they only sometimes have access to a computer and the internet at home during their studies. Because of this, it required some students to choose public internet cafés, which also struggle with low bandwidth and hinder the country's ability to implement e-learning effectively. Thus, face-to-face teaching methods are still in use, and blended learning programs are only seen as tools for enhancing educational activities. Hypothesis two is also against Nyandara (2012) finding that students find it difficult to access the internet because doing so inside and outside university learning centres comes with a hidden fee. However, the finding of hypothesis three supported the outcome of Fencl (2004) that

through self-efficacy, students with various teaching methods performed significantly better than students in the conventional section, despite the promise that the self-efficacy theory shows for understanding retention and achievement patterns in education settings. When individual strategies are examined, the strongest associations can be discovered. The study of Odey and Odey (2019) leverages hypothesis four, that one might question whether the high failure rates and poor quality of the students are not a reflection of the instructional quality in the schools given the observed decline in the pedagogy, attitude, personal commitment and value of students.

6. Conclusion

The study concluded that blended learning technologies significantly impact pedagogy. Even so, most nursing students in the sample said they had the technical know-how to set up blended learning with their information technology tools, allowing them to complete their programme quickly. Additionally, it was found that the teaching flexibility provided by blended learning did not impact the student's comprehension of the lectures. There may be additional factors that limit the pedagogical flexibility of the instruction when attending their virtual lectures. The effectiveness of learner self-efficacy was discovered through the learners' unique beliefs. However, some might need more abilities, making it easier for them to implement blended learning effectively. The learners' commitment determined the effectiveness of blended learning implemented in schools.

Recommendations

Based on the findings, the study recommended that the government's role in funding tertiary institutions should be considered. Administrators of tertiary institutions should support blended learning for both teachers and students. Building a supportive technological environment and creating a technical hub for students will lower education costs and promote academic advancement. Technology should be incorporated into tertiary institutions' curricula by educational institutions. Modernising the current technological infrastructure and creating cutting-edge, competitive education for the populace is necessary. To combat insecurity, the government should fulfil its social responsibility by offering citizens affordable education. Young people should be constantly instilled with a technological mindset through technological empowerment that will enable undergraduates to support themselves.

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