POTENTIAL OF FLIPPED CLASSROOM IN IMPROVING BUSINESS STUDENTS' LEARNING OUTCOMES IN COLLEGES OF EDUCATION, SOUTH-SOUTH ZONE OF NIGERIA

BY

NSIEN, CHRISTIANA BENJAMIN Ph.D

AND

STELLA INIOBONG UFOT Ph.D
DEPARTMENT OF BUSINESS EDUCATION
AKWA IBOM STATE COLLEGE OF EDUCATION
AFAHA NSIT, NSIT IBOM

Abstract

Emerging educational technologies have received increasing research attention, particularly in developed countries, with results suggesting that such technologies can influence positive learning outcomes. However, in the context of developing countries, little is empirically known about the efficacy of these models in boosting learning outcomes. This study surveyed selected colleges of education in the South-South Zone of Nigeria to investigate the potential influence of flipped classrooms on business students' learning outcomes. The study's specific objectives were to examine the impact of flipped classrooms on business students' cognitive, behavioural, and affective learning outcomes. The population of this study was 569 final-year business education students. The study had 235 as its sample size determined through the Taro Yamane sample size determination formular. The structured questionnaire utilised in data collection recorded a response rate of 81%. Data analysis was carried out using a regression method. Findings indicated that flipped classrooms can significantly and positively improve the learning outcomes of business students in colleges of education in the South-South Zone of Nigeria (adjusted R2 = 0.783); specifically, results of the study suggested that, in order of importance, flipped classrooms have the potential to influence students' affective learning outcomes ($\beta = 1.023$, $t = 4.328$, $p<0.05$), cognitive learning outcomes ($\beta = 0.713$, $t = 3.646$, $p<0.05$), and behavioural learning outcomes ($\beta = 1.002$, $t = 2.507$, $p<0.05$). Based on these findings, it was concluded that a flipped classroom is an innovative educational technology that can improve business students' learning outcomes. It was recommended that flipped classrooms should be considered and deployed for teaching business students in Colleges of Education in the South-South, Nigeria in order to improve the students's learning outcomes.

NSIEN, CHRISTIANA BENJAMIN Ph.D & STELLA INIOBONG UFOT Ph.D

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Introduction

World-wide experience has shown that educational institutions face some difficulties in motivating and engaging their students in the learning process. In particular, it has been touted in some quarters that following the traditional way of teaching triggers boredom in the daily classroom interaction between students and teachers. Such boredom affects the quality of the learning process, which to some extent influences learning outcomes. In recent times, however, innovative educational technologies have come in handy in providing the

motivation and engagement of students towards improvement in their learning outcomes. One such innovative educational technology is the flipped classroom.

The flipped classroom educational technology is an innovative model that involves teachers' application of instructional videos and supporting materials before class coupled with engaging students in interactive and collaborative learning activities to facilitate students' learning during classes (Cheng, Ritzhauupt, and Antonenko, 2018). For these authors, flipped classrooms represented a new pedagogical approach that uses asynchronous video lectures and practice problems as homework and active, group-based problem-solving activities when meeting in class. Furthermore, Tomas, Doyle, and Skamp (2019) define a flipped classroom as an approach to learning in which traditional classroom lectures are made to shift away from regular classes facilitated by technology and face-to-face class time for active learning activities. Simply put, the flipped classroom is concerned with blended learning systems combined with face-to-face instruction mediated by computer instruction (Graham, 2013).

The emphasis placed on flipped classroom educational technology is on transforming learning from a teacher-orientated to a student-orientated experience (Sams and Bergmann, 2013; Bishop, Verleger, 2013). Similarly, Brooks (2014) asserts that using the flipped classroom model for teaching and learning provides students with active instructional and learning activities with videos while reserving the class time for opportunities to hold discussions. Again, Nichols, Burgh, & Kennedy (2017) opined that leveraging a flipped classroom enables engaging students with learning materials outside the classroom while preparing for active learning activities in class.

Flipped classroom aims to change the traditional lectures to introductory lessons where students are exposed to content online materials, as class time is reserved for discussions, peer interaction, active learning activities, and problem-solving activities (Velegol, Zappe, and Mahoney 2015). The thrust of flipped classroom learning is to start the learning process with students being engaged with lower thinking activities while at home while higher thinking activities are carried out in the classroom, enabling students to independently control their learning by performing tasks that enhance individualised learning (Huang & Hong, 2016; Olakanmi, 2017; O'Flaherty & Phillips, 2015). As an educational model, a flipped classroom promotes problem-solving over lectures in the classroom. This approach relates to active learning, student-centred learning, inquiry-based learning, and learning by doing, among others (Keengwe, Onchwari, & Agamba, 2014). This idea presents a flipped classroom as an innovative approach to learning that can improve learning outcomes.

The learning process is expected to result in outcomes. Mahajan and Singh (2017) define learning outcomes as guiding tools that direct the students to the desired results of the planned course and help provide the teachers with the path to be followed to make the students aware of what they will be able to achieve at the end of the course. In this study, learning outcomes used include cognitive learning outcomes, behavioural learning outcomes, and affective learning utcomes. The cognitive learning outcome is concerned with how learners manage their thinking and learning processes, such as in knowledge and retention. The behavioural learning outcome refers to a learning outcome stated in measurable terms, which gives direction to the learner's experience and becomes the basis for student evaluation. This may take the form of effort. The affective learning outcome deals with attitudinal and motivational outcomes such as motivational dispositions, self-efficacy,

and goal setting. These outcomes are important to educational institutions such as colleges of education.

The College of Education is an institution with the mandate to produce high-quality professionals who have good academic knowledge of their subject disciplines as well as other personal qualities that are worthy of emulation by students; hence, students' learning outcomes are important to both teachers and students. Currently, teachers in colleges of education in Nigeria deliver lectures largely through the traditional approach in which the teacher lectures in the classroom. Students listen in class and may have little or no time to practice while after class they do their homework.

However, colleges of education are supposed to produce graduates who are proficient in their core disciplines. Business education graduates, for instance, should expect to be well-rounded and knowledgeable in various areas of business calling. This has not been so judging from the job performance of some recent graduates in the discipline. This seems to give the impression that the traditional learning approach is inadequate in producing cognitive, behavioural, and affective learning outcomes. Because of this inadequacy, an innovative educational model such as a flipped classroom reported to have a positive effect on students' learning outcomes comes in handy. Based on the foregoing discussion, this study was conducted to investigate the potential influence of flipped classrooms in improving the learning outcomes of business students in colleges of education in the South-South Zone of Nigeria. It was hypothesised that a flipped classroom has no significant positive influence on business students' learning outcomes in colleges of education in the South-South Zone of Nigeria.

Literature Review

The flipped classroom is an emerging instructional model that reverses traditional teaching methods. In traditional teaching, students are expected to study lectures together in the classroom; they are also expected to do assignments outside the classroom. The flipped classroom model is different in that students learn with instructional materials outside the classroom at their own pace and do assignments and interactive activities in the classroom (Sams and Bergmann, 2013). Mok (2014) hinted that a flipped classroom enables teachers to deliver lectures before class while later the teacher spends class time engaging students in learning activities that involve collaboration and interaction. This implies that the flipped classroom model empowers students with knowledge before class and deepens and applies this knowledge during class. Staker and Horn (2012) asserted that a flipped classroom primarily delivers content and instruction online. Flipped classroom lectures are expected to be viewed and processed by students before class; this is so in order to have class time devoted to guiding students in problem-solving and discussions on the critical issues (Sams and Bergmann, 2013).

Several writers in literature have posited that flipped classrooms could improve learning outcomes (O'Flaherty and Phillips, 2015; Al-Samarraie, Shamsuddin, and Alzahrani, 2020). In addition, some authors are of the view that with flipped classrooms, students' academic performance could be improved (Thai, Wever, and Valcke, 2017). Similarly, students' satisfaction may result from the flipped classroom model (Martínez-Jiménez and Ruiz-Jiménez, 2020). Furthermore, students' engagement was likely with the use of flipped classroom technology, and learners' skills can be improved upon (Murillo-Zamorano,

Sánchez, and Godoy-Caballero, 2019). In addition, flipped classrooms prioritise learning motivation and higher self-efficacy (Zhao, Liu, and Su, 2021).

Gough, DeJong & Grundmeyer (2017) noted that flipped classrooms provide students with foundational knowledge outside class while reserving in-class time for concept application and mastering critical thinking skills. Mok (2014) argued that the flipped classroom is a unique instructional model that encourages a different classroom culture with the help of technology to broaden 21st-century learning styles. Other studies have indicated that a higher standard of effective teaching and learning in the future revolves around the flipped classroom approach (Bernard, 2015; Zainuddin & Halili, 2016).

Lai and Hwang (2016) found enhanced student learning outcomes, increased achievement, and satisfaction associated with the flipped classroom through engaging in problem-solving activities. Köroglu and Çakir (2017) reported that students experience learning activities that provide opportunities for performing higher-order thinking activities after acquiring knowledge and learning skills. In addition, other studies have reported improvement in cognitive learning outcomes and students' motivation to increase learning outcomes (Reyes-Lozano, MedaCampana & Gamboa 2015).

This study is anchored on mastery learning. This theory is credited to Benjamin Bloom in the 1960s. The theory brings to the fore the importance of using flipped learning in a meaningful and structured manner. The theory holds that through a flipped classroom, students can learn at their own pace. Therefore, learning is differentiated. Following the principles of mastery learning, learners are required to learn common, well-structured objectives. In a situation in which learners do not master an objective, remediation is required. As posited by Sams and Bergmann (2013), mastery learning supports flipped learning. This is because a flipped classroom provides instruction that is differentiated, asynchronous, and student-centred. Also, it offers a context for remediation and efficient feedback. This aligns with flipped learning, where students have the potential to learn in their own time with a certain amount of autonomy in regards to time management.

Methodology

This study was based on the survey research design. The study had a population of 569 and its sample size was 235 determined through the Taro Yamane sample size determination formula. The population was drawn from final-year National Certificate for Education (NCE) and degree business students from selected colleges of education from the South-South Zone of Nigeria. One institution was picked from each state of the South-South. The institutions and the number of students involved were as follows: College of Education, Afaha Nsit (AAkwa Ibom State-92); College of Education, Akamkpa (CCross River State-79); College of Education, Igueben (Edo State-98); College of Education, Omoku (Rivers State-106); Isaac Jasper College of Education, Sagbama (Bayelsa State-81); and College of Education, Agbor (DDelta State-113). The administration of the research instrument was done proportionally. The research instrument had earlier been subjected to validation. Research variables were measured with a five-point Likert-type scale as follows: strongly agree (SA-5), agree (A-4), disagree (D-3), Strongly disagree (SD-2), and undecided (UN-1). Descriptive and inferential analyses were conducted in the study. In terms of descriptive analysis, a mean of 3.0 and above was to be accepted. For the inferential analysis, multiple regression analysis was used to test the formulated hypothesis. All analyses were conducted at a 0.05 level of significance.

RESULTS AND DISCUSSION

Table 1: *Students' perception of the flipped classroom on Cognitive Learning Outcome*

Constructs	Agree (%)	Disagree (%)	M	SD
If a teacher uses different teaching strategies it will enhance better understanding of lessons	77.46	22.54	3.81	0.48
Blended learning will encourage students to look for more information on an area of study	69.62	30.38	3.69	0.73
I can easily remember the contents of study I sourced by myself	71.66	28.34	4.02	0.71
If I study a subject before coming to class, I will be able to interact well with my teacher in class	81.21	18.79	4.79	0.89
Overall	74.99	25.01	4.08	0.70

Source: Field Survey, 2023

Table 1 is a descriptive analysis of business students' opinions on the potential influence of a flipped classroom on their cognitive learning outcome. Based on the constructs, the overall percentage in agreement with the statements was 74.99%. This was in the majority as against those who disagreed, which was 25.01. Similarly, the overall mean for these statements was 4.08 on a scale of 5. Also, 0.70 was recorded as the standard deviation. These results indicated that most of the students supported the position that a flipped classroom can influence their cognitive learning outcome.

Table *2*: *Students' perception on flipped classroom on Behavioural Learning Outcome*

Constructs	Agree (%)	Disagree (%)	M	SD
It will be easier to learn if I have the opportunity to learn on my own but with proper guidance	73.35	26.65	3.13	0.63
I will be encouraged to learn faster if I am made to participate online to discuss lecture materials with my mates	61.39	38.61	3.42	0.72
My effort at achieving more in my learning will be boosted if I am given an advanced material to study before class meeting	83.03	16.97	3.11	0.67
I am encouraged to learn if more time is given to me to prepare ahead	62.83	37.17	3.33	0.61
Overall	70.15	29.85	3.17	0.66

Source: Field Survey, 2023

Table 2 presents a descriptive analysis of business students' opinions on the potential influence of a flipped classroom on their behavioural learning outcome. In line with the constructs used, the overall percentage in agreement with the statements was 70.15%, and this was in the majority while those in disagreement were 29.85. In the same vein, the overall mean for these statements was 3.17 on a scale of 5. Also, 0.66 was recorded as the standard deviation. These results indicated that the majority of the students were of the view that a flipped classroom could determine their behavioural learning outcome.

Table 3: *Students' perception on flipped classroom on Affective Learning Outcome*

Constructs	Agree (%)	Disagree (%)	M	SD
Learning materials if given online are exciting to study	64.11	35.89	3.39	0.68
I am motivated to learn with ease whenever I go online for information	77.28	22.72	4.04	0.73
I understand myself that studying online empowers me with more knowledge	65.02	34.98	3. 62	0.66
I will support the use of online resources and study materials along side classroom discussion	86.13	13.87	3.38	0.76
Overall	73.14	26.87	3.61	0.71

Source: Field Survey, 2023

Table 3 is a descriptive analysis of business students' opinions on the potential influence of a flipped classroom on their affective learning outcome. Following the constructs employed, the overall percentage in agreement with the statements was 73.14%. This represented those in the majority as against those who disagreed, which was 26.87. Again, the overall mean for these statements was 3.61 on a scale of 5. Also, 0.71 was recorded as the standard deviation. These results showed that most of the students supported the position that a flipped classroom can influence their affective learning outcome.

Test of Hypothesis

Ho: Flipped classroom has no significant positive influence on business students' learning outcomes in colleges of education in the South-South Zone of Nigeria.

Hi: Flipped classrooms have a significant positive influence on business students' learning outcomes in colleges of education in the South-South Zone of Nigeria.

Table. 4: Regression Analysis Result on the influence of Flipped Classroom on Business Students' Learning Outcomes in Colleges of Education, South South Zone of Nigeria

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.885[a]	.783	.707	3.11143

Goodness of Fit[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	216.221	3	261.324	82.137	.000[b]
	Residual	331.034	189	.309		

	Total	547,255	190		

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	T	
	(Constant)	0.163	.352		1.033	.000
	X1i	0.713	.193	1.013	3.646	.000
	X2i	1.002	.400	1.381	2.507	.000
	X3i	1.023	.237	1.796	4.328	.001

a. Dependent Variable: Business Students Learning Outcome
b. Predictors: (Constant), Cognitive learning outcome, behavioual learning outcome, affective learning outcome
Source: Researchers' Computation

Table 4. presents the influence of a flipped classroom on business students' learning outcomes in the South-South Zone of Nigeria. The generalised model summary showed an adjusted R2 of 0.783, which implies that 78.3% of flipped classroom usage will result in 78.3% changes in the learning outcomes of the students. The model also showed significant goodness of fit (p-value <0.05), which shows that there would be a linear relationship. Cognitive learning outcome (Xli), behavioural learning utcome (X2i), and affective learning outcome were all significant. In line with these results, the null hypothesis, which was that the flipped classroom has no significant positive influence on business students' learning outcomes in colleges of education in the South-South Zone of Nigeria, is rejected. The implication of this outcome is that a flipped classroom has a significant positive influence on improving business students' learning outcomes in colleges of education in the South-South Zone of Nigeria. Furthermore, results of the study suggested that, in order of importance, a flipped classroom has the potential to influence students' affective learning outcomes ($\beta = 1.023$, $t = 4.328$, $p<0.05$), cognitive learning outcomes ($\beta = 0.713$, $t = 3.646$, $p<0.05$), and behavioural learning outcomes ($\beta = 1.002$, $t = 2.507$, $p<0.05$).

The analysis in this study indicates that the flipped classroom has a significant influence on business students' learning outcomes in colleges of education in the South-South zone of Nigeria. Findings of this study strengthen previous research findings. For instance, Zainuddin & Halili (2016) found that a higher standard of effective teaching and learning in the future revolves around the flipped classroom approach. Also, Lai and Hwang (2016) found enhanced student learning outcomes, increased achievement, and satisfaction associated with the flipped classroom through engaging in problem-solving activities. Furthermore, other studies have reported improvement in cognitive learning outcomes and students' motivation to increase learning outcomes (Reyes-Lozano, MedaCampana & Gamboa 2015). Furthermore, Aidoo, Tsyawo, Quansah, & Boateng (2022) established that

flipped classrooms had positive learning impacts such as achievement, motivation, critical thinking, and collaborative learning. Similarly, Chen (2021) found that a flipped classroom had a positive effect on learning outcomes and satisfaction.

In addition to the above, some writers posit that flipped classrooms could improve learning outcomes (O'Flaherty and Phillips, 2015; Al-Samarraie, Shamsuddin, and Alzahrani, 2020). Other authors argue that with a flipped classroom, students' academic performance could be improved (Thai, Wever, and Valcke, 2017). Also, it has been asserted that innovation in education, as in all sectors of the economy and society, is imperative to bring about qualitative changes, in contrast to the mere quantitative expansion that has been seen so far, which can lead to more efficiency and improved outcomes in quality and equity of learning opportunities (OECD, 2016).

The implication of these findings is that the deployment of a flipped classroom will positively influence the affective learning outcome of business in colleges of education in the South-South Zone of Nigeria through appropriate motivation and encouragement of students, in addition to making learning quite exciting to the students. Again, the result of the study has shown that through a flipped classroom, the behavioural learning outcome of students can be positively influenced in ways such as having the independence and encouragement to learn ahead of lectures and to source for more information on their studies. Furthermore, the results suggest that a flipped classroom can positively support motivation and self-efficacy on the part of the students to learn.

Conclusion

This study was conducted to investigate the potential influence of flipped classrooms on business students' learning outcomes in colleges of education in the South-South Zone of Nigeria. Analysis carried out in the study indicated that the use of a flipped classroom has the capacity to positively influence business students' learning outcomes. Specifically, it showed that a flipped classroom can positively influence business students' cognitive, behavioural, and affective learning outcomes. The study has both theoretical and practical implications. Theoretically, the idea by some writers supporting the application of flipped classroom rooms, particularly in the developed countries, has been tested, with results indicating that the same result recorded in the developed countries can be replicated in the developing countries. Practically, the field survey has shown that the use of a flipped classroom can indeed improve the learning outcomes of business students.

Recommendations

The following recommendations are necessary:

1. In situations where relevant school authorities are thinking of an effective way of improving upon the learning outcome of their students, the use of a flipped classroom may come in handy as an important option to consider.
2. Flipped classrooms should be deployed in colleges of education in the South Zone of Nigeria for the purpose of teaching business students in the institutions with a view to improving students' learning outcomes.
3. To improve upon generalisation of findings in the future, experimental research is suggested.

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