

Impact of Blended Learning on Senior Secondary Students' Engagement and Achievement in English Language and Mathematics in Mubi South I. G. A. Adamawa State

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Abstract

The effects of blended learning on student engagement and accomplishment in English Language and Mathematics in Adamawa State's Mubi South Local Government Area is investigated in this study. The study used a survey research approach. In Mubi South LGA, Adamawa State, 250 SS II students were randomly selected from a total population of 14,982 SS II students. Data were collected through questionnaire and were analysed using mean, standard deviation as well as t-test analytical tool. It was found that students from highly blended learning schools had high level of academic engagement significantly than those from less blended learning school. Students in highly mixed learning schools had significantly higher academic achievement than students in less mixed learning schools. When children are exposed to blended learning in both English and mathematics, there is no substantial difference in academic engagement or accomplishment between male and female students. According to the findings, blended learning is critical for student engagement and achievement in schools, as well as addressing gender differences among students. More teacher training, the provision of appropriate infrastructure for blended learning, and collaboration between government organizations and software companies for various educational applications were also recommended in the study.

Keywords: Blended learning, student achievement, Mathematics, English Language, Engagement, Impact.

Introduction

A blended learning model is undoubtedly a great way to augment the learner's learning progress. One option that blends face-to-face instruction with an internet approach is blended learning. It is a combination of face-to-face and computer-mediated instruction (Roh, 2003). Blended learning is a mix of traditional face-to-face and electronic learning that takes place both in and out of the classroom, with the online component serving as a natural extension of traditional classroom training (Rovai & Jordan, 2004). Graham (2006) defines blended learning as the combination of two different education models, traditional face to face learning and distance learning. Blended learning can also be defined as integrating face to face learning and electronic learning or distance learning, using difference learning theories, methodologies and techniques in the same place and supporting the learning with various online technologies during the learning process in the classroom (Singh, 2016).

The use of technological advance resources – computers, mobile devices such as smartphones and tablets, digital cameras, social media platforms and networks, software applications, and the internet, among others – in daily classroom practices and in the management of school activities is referred to as blended learning. Recent data has revealed that technology is used instinctively across all racial, ethnic, religious, political, and gender lines and is not restricted to a single age group (Hamilton-Hankins, 2017; D'Angelo, 2017; Esoswo, 2017). For all secondary school students in Nigeria, mathematics and English language are required subjects for students' admission into tertiary institutions in Nigeria. The incorporation of technology into education may increase students' interest in the topic while also improving their performance in mathematics, english language, and other subjects.

Academic achievement is a pedagogical phrase that refers to the process of establishing a learner's success in formal education. It is measured through

reports, examinations, research, and ratings that take into account a variety of elements (Yusuf & Adigun, 2010). The West African Examination Council has confirmed the trend of low achievement among senior public secondary school students in Adamawa State (WAEC). The following statistics of student accomplishment in Adamawa State's Senior School Certificate Examination based on WAEC results for the years 2013, 2014, 2015, 2016, 2017, 2018 and 2019 revealed students' poor performance in Mathematics and English Language. Measures to boost student performance bolstered the case for incorporating technology into the educational system. However, because of technology's intrusive nature, many educators question its effectiveness in instructing today's students. Blended learning may not be a complete remedy for low student accomplishment; for example, Sam-Kayode and Salman (2016) noted negative aspects of technology such as changing students' thinking, feelings, priorities, and how teachers monitor their students' development.

It's not unreasonable to believe that incorporating technology into these subjects (English Language and Mathematics) will exacerbate learning difficulties, since learners will be more focused on the technology than on the information provided by technologically based instruction. As a result, it is critical to consider whether incorporating technology into the teaching and learning of English Language and Mathematics contributes to low achievement or not. As a result, the purpose of this study is to investigate the impact of blended learning on senior secondary school students' involvement and achievement in English Language and Mathematics in Mubi South Local Government Area of Adamawa State, Nigeria.

Statement of the Problem

Considering the significance of technological integration in the education system in this digital era, many secondary schools in the early twenty-first century still teach English Language and mathematics in a relatively traditional manner. Most schools still use pen and paper to teach their students, despite the fact that many other schools in both developed and developing countries have progressed beyond previous stages of technological integration. This demonstrates the early differences between students from technologically integrated institutions and those who were taught using

traditional techniques. The actual impact of technological integration on the learners 'engagement and achievement in education has been repeatedly attracting mixed reactions and opinions. Some argued that using technology lead to over exposure of students to uncontrolled information, which lead to distraction, misinformation and poor performance in core subjects. Meanwhile, some maintained that integration of technology into teaching and learning has led to higher level of engagement and improve academic performance. It has also changed the ways in which people think, go about gaining new knowledge, communicate, collaborate, and problem-solving.

As a result, it is clear that research into the impact of technological integration on students' engagement and performance in secondary schools is ongoing. As a result, more research is needed to clarify the actual achievement of technological integration, which is evidently increasing in our schools today, on the engagement and performance of senior secondary school students, particularly in Mathematics and English Language. Furthermore, to the best of the researcher's knowledge, no research has been conducted on the impact of blended learning on students' engagement and performance in Adamawa state, particularly in the Mubi South Local Government Area of Adamawa state, where public secondary schools are few in number and most private secondary schools use technology for teaching and learning.

Purpose of the Study

The main purpose of this study was to determine the impact of blended learning on students' engagement and achievement in English Language and Mathematics in Mubi South Local Government Area of Adamawa State. To achieve this purpose, the following specific objectives are drawn to;

- i. Assess the impact of blended learning on students' levels of involvement in English Language and Mathematics in Mubi south L. G. A., of Adamawa State
- ii. Assess the impact of blended learning on students' academic performance in English Language and Mathematics in Mubi south L. G. A., of Adamawa State.
- iii. Assess the impact of blended learning on male and female students' academic achievement in English Language and

Mathematics in Mubi south L. G. A., of Adamawa State.

Research Questions

The following research questions are formulated to guide the study:

- i. What is the difference in students' academic engagement in English Language and Mathematics when they are exposed to blended learning and when they are not?
- ii. What is the difference between students' academic achievement in English language and mathematics when they are exposed to blended learning and those who are not?
- iii. What is the difference between male and female pupils' academic achievement when they are exposed to blended learning?

Research Hypotheses

The following null hypotheses were formulated for testing at $p < 0.05$.

- H₀₁: There is no significance difference between the level of academic engagement of students in English Language and Mathematics when exposed to blended learning and those students without blended learning
- H₀₂: There is no significance difference in the academic achievement of students in English Language and Mathematics when exposed to blended learning and those students without blended learning
- H₀₃: There is no significance difference in the level of academic engagement of male and female students in English and mathematics when exposed to blended learning

Significance of the Study

This study focuses on impact of blended learning on students' engagement and achievement in both English Language and Mathematics. The findings from this study are expected to help, educationists, students and curriculum developers for English and Mathematics. This is to understanding the need to improve on blended learning to enhance the students' learning outcomes in respect to cognitive and social skills of academic achievement and attitude to both English Language and mathematics respectively. Specifically, the finding from this study is expected to expose both English language and mathematics teachers to novel approach of teaching their subject using integrated technology to enrich their instruction.

The findings of this study will provide a guide for curriculum planners to understand the effect and need to integrate technology into curriculum to encourage its adaptation during curriculum implementation. It will also serve as eye opener for the students to be aware of the importance of blended learning rather than exercising technophobia. This will also enhance their appreciation of their personal digital devices such as mobile phone, laptop, iPad among others that the students might be wrongly used. Through the study students could know that the digital devices can aid their understanding and interest in both English language and Mathematics.

Materials and Methods

The study adopts a survey research design. A survey research design is one in which the researcher does not aim to control or manipulate any of the variables under investigation. In this study, the survey research design is deemed suitable because the study investigate opinion, attitude, activities and characteristics of students in relation to the impact of blended learning on student engagement and achievement in English and mathematics in Mubi South local government area of Adamawa State.

The study is conducted in Mubi south Local Government Area (LGA) of Adamawa state. Mubi south consist of Three Districts, namely; Gude, Mugulbu and Nassarawo. It lies on latitude 1011'14.64" N and longitude 13°23'44.74" E. It covers a land mass of about 419.6 square kilometers with a Population of 193, 392,500 people (2006 National population Census of Federal Republic of Nigeria official Gazette, 2016 projected). Mubi south is bounded by Republic of Cameroun to the north, Maiha Local Government to the west, Hong Local Government to the south and Mubi north Local Government to the East. The major food crops cultivated in the area are Maize and sorghum, cash crop cultivated in the area includes groundnuts, Cowpea, Irish potatoes among others.

The target population of this study consists of all SS II Mathematics and English students of Senior Secondary School in Mubi South, Adamawa state. The SS II is chosen for the study because the class is stable; which means that it is neither facing the problem of being freshly enrolled into SS I nor preparing for final year school examination as those in SS III. There is a population of 14,982 SS II

students across private and public secondary schools in Mubi South LGA, Adamawa State.

Students from four senior secondary schools in Mubi South Local Government Area, Adamawa State participated and served as sample in the study. Simple random sampling technique was used to select four out of 11 schools. Intact classes were used as respondents to the questionnaires.

The instrument for data collection was Mathematics/English Engagement and Achievement Questionnaire (MEEAQ). The MEEAQ contain 32 items, sectioned into four (Section A – D). Section A comprised of two item on age and gender of respondents, while Section B comprises of 8 items focused on level of blended learning in schools. Also, Section C comprises of 20 items, focus on level of student's engagement.

Each item is scaled in 5-point Likert type, Very High (VH), High (H), Moderate (M), Low (L) and Very Low (VL) with points 5, 4, 3, 2 and 1 respectively. the reference point is taking from 3.0 that is $5+4+3+2+1 \div 5 = 3.0$ Also, section D focused on level of Mathematics and English Language achievement comprises of 12 items, scaled on 4-point, Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagreed (SD).

The reliability of the instruments (MEEAQ) was determined using Government Day Secondary School Damare and Concordia College Yola Adamawa State. The schools selected for the pilot test are different schools in term of locality but have similar characteristics with the sampled schools for the study. The remaining items on MEEAQ after face and content validation were trial tested on 40

SSII students selected at random from both schools. The results from trial testing were used for item analysis. The reliability of the test items was computed using Cronbach Alpha. The choice of Cronbach Alpha was because it is very appropriate for determining the degree of reliability of standard test. After scoring the test, a reliability coefficient of 0.83 was obtained. Thus, the MEEAQ was considered reliable, since the obtained co-efficient of reliability was greater than 0.70, based on argument by Sambo (2008) that any co-efficient of reliability greater or equal to 0.70 is considered reliable and sufficient for empirical study.

The data for this study was collected using the MEEAQ instrument. The instruments were administered to SS II students in the sampling schools after seeking proper permission from school principals. Mathematics and English teachers were served as research assistants. The scripts were collected after administration, grade and sorted for analysis.

Method of Data Analysis

The data collected in the study were analysed using descriptive statistics to answer research questions and inferential statistics to test the hypotheses. The research questions were answered using mean and standard deviation while the hypotheses were tested using analysis of t-test statistics at 0.05 level of significance run at SPSS (Statistical Package for Social Science) version 20.

Results

Research Question 1: What is the difference in students' academic engagement in English Language and Mathematics when they are exposed to blended learning and when they are not?

Table 1: Mean Rating of Respondents on the Level of Academic Engagement in Respect to Blended Learning in their Respective Schools

S/n	Items	Less Tech IntSch (n=125)		High Tech IntSch (n=125)	
		Mean	Std. Dev	Mean	Std. Dev
1	Time spending on school related task	2.9	0.82	3.7	0.69
2	Interest in schools activities	2.0	0.16	3.5	0.14
3	Involvement in academic activities	2.4	0.02	3.6	0.11
4	Effort to avoid dropping out	2.8	0.83	3.6	0.18
5	Extent of observing school rules	2.5	0.98	3.8	0.90
6	Your punctuality in school	2.9	0.95	3.8	0.85
7	Extent of adhering to classroom norms	2.4	0.17	3.5	0.28
8	Ability to avoid disruptive behaviour	2.5	0.42	3.7	1.05
9	Effort to follow teachers instruction	2.5	0.03	3.6	0.75
10	Reaction to classmates during classroom activities	2.4	0.47	3.5	0.79
11	Sense of belonging to schools	2.6	0.01	3.6	0.01
12	Mastery of difficult skills	2.1	0.47	3.6	0.78
13	Ability to ask question while in class	3.9	0.76	3.6	0.92
14	Effort to learn new thing while in class	2.7	0.75	3.7	0.15
15	Readiness to participate in classroom debate	2.8	0.22	3.4	0.46
16	Willingness to join classmate in solving assignment	2.9	0.60	3.6	0.33
17	Effort on self-study while away from school	2.4	0.39	3.5	0.32
18	Ability to seek something new	2.7	0.44	3.5	0.68
19	Readiness to share idea with other classmate	2.9	0.85	3.4	0.41
20	Willingness to meet teachers for more clarification	2.8	0.82	3.5	0.85
	Grand value	2.7	0.51	3.6	0.53

Key: Less Technology Integration in School (**Less Tech IntSch**); High Technology Integration in School (**High Tech IntSch**)

Table 1 shows how students rate their degree of academic engagement in relation to the level of technology accessible in their schools. The results demonstrated that students from schools with less blended learning scored a mean below 3.0 on all of the items in the table. (Ratings range from 2.0 to 2.9 on a scale of one to ten). Students at high blended learning institutions, on the other hand, scored all of the table items above 3.0, implying a high level of engagement (mean rating 3.4–3.7). This finding

demonstrates that blended learning in schools improves student engagement by increasing time spent on school tasks, increasing students' interest in school activities, promoting punctuality, and strengthening students' ability to follow teachers' instructions. Blended learning also allows students to master challenging skills and contribute during class. Self-study, sharing ideas with classmates, and pursuing new knowledge even when at home, are all advantages of blended learning

Research Question 2: What is the difference between students' academic achievement in English

language and Mathematics when they are exposed to blended learning and those who are not?

Table 2: Students' Perspectives on the Impact of Blended Learning in their Schools on Academic Achievement in English Language and Mathematics.

S/n	Items on Achievement in Mathematics/English	Less Tech IntSch (n=125)		High Tech IntSch (n=125)	
		Mean	Std. dev	Mean	Std. dev
1	My ability to solve mathematical expression has improved due to video clip and other technologies	1.8	0.72	3.6	0.18
2	My understanding of figures in mathematics has improved due to interactive applications	2.1	0.78	3.8	0.38
3	Provision of e-library in my schools responsible for my ability to prove mathematical theories	2.6	1.44	3.6	0.33
4	The use of Smartphone applications provided by my schools guide us on hand-on practices of mathematical equations	1.5	0.18	3.6	0.31
5	I consider my mathematical understand excellent since I can solve any mathematical models or equation using recorded video clips	1.6	0.52	3.6	0.10
6	Difficult and complex mathematics are no longer my worry since there are applications and devices that simply the task for my understanding	2.5	1.04	3.8	0.69
7	My level of understanding of English language has increased over the period due to technology in my school	1.3	0.27	3.5	0.56
8	My school put technology in place which enhanced our oral English	2.4	1.30	3.6	0.02
9	My pronunciation of words and vocabularies has improved due to audio-clips provided by my school	2.5	0.18	3.6	0.31
10	The use of smartphone applications provided by my schools has increased my identification of words and meaning	1.2	0.04	3.7	0.38
11	The use of modern technology as provided by my schools has enhanced my comprehension of short storage and passages	1.9	0.13	3.4	0.06
12	My letter writing ability has improved as results of consistent replay of video clip	1.5	0.13	3.7	0.52
	Grand Value	1.9	0.6	3.6	0.3

Key: Less Technology Integration in School (**Less Tech IntSch**); High Technology Integration in School (**High Tech IntSch**)

Table 2 shows how students in the sample perceive the effects of blended learning on their academic progress in mathematics and English language. All items were scored below 3.0 (mean rating 1.2–2.5) for students from schools with less integrated learning, while all things were rated above 3.0 (mean 3.4–3.8) for students from schools with strong integrated learning. This means that students from schools with a high level of integrated learning are better able to solve mathematical expressions than students from other institutions. Students were

also able to recognize figures and shapes as a result of blended learning, as well as gain experience proving mathematical theorems. The results in the table also show that blended learning in schools improves oral English, word pronunciation, and word meaning determination.

Research Question 3: What is the difference between male and female pupils' academic achievement when they are exposed to blended learning?

Table 3: Effect of Blended Learning on the Academic Achievement of Male and Female Students in Senior Secondary Schools, Mubi South LGA of Adamawa State.

S/n	Items on Achievement in Mathematics/English	Male (n=54)		Female (n=71)	
		Mean	Std. dev	Mean	Std. dev
1	My ability to solve mathematical expression has improved due to video clip and other technologies	3.6	0.60	3.5	0.33
2	My understanding of shapes and figures in mathematics has improved due to interactive teaching applications	3.8	0.78	3.1	0.95
3	Provision of e-library in my schools responsible for my difference experiences in proving mathematical theories	3.4	0.64	3.6	0.57
4	The use of smartphone applications provided by my schools guide us on hand-on practices of mathematical equations	3.6	0.31	3.2	0.10
5	I consider my mathematical understand excellent since I can solve any mathematical models or equation using recorded video clips	3.8	0.35	3.5	0.02
6	Difficult and complex mathematics are no longer my worry since there are applications and devices that simply the task for my understanding	3.7	0.42	3.1	0.03
7	My level of understanding of English language has increased over the period due to technology in my school	3.2	0.53	3.6	0.20
8	My school put technology in place which enhanced our oral English	3.4	0.59	3.7	0.22
9	My pronunciation of words and vocabularies has improved due to audio-clips provided by my school	3.6	0.31	3.6	0.10
10	The use of smartphone applications provided by my schools has increased my identification of words and meaning	3.4	1.00	3.1	0.18
11	The use of modern technology as provided by my schools has enhanced my comprehension of short storage and passages	3.3	0.37	3.5	0.42
12	My letter writing ability has improved as results of consistent replay of video clip provided by my schools	3.7	0.59	3.2	0.13
	Grand Value	3.6	0.51	3.4	0.30

The results on Table 3 revealed the responses of sampled male and female students regarding the effect of technology integration on their academic achievement in both mathematics and English language. The result showed that both male and female students rated their academic achievement high, with respective means for item greater than 3.0. The mean rating ranged from 3.3 – 3.8 and 3.1 – 3.7 for male and female students respectively.

Testing of Hypothesis

H_{01} : There is no significance difference in the level of academic engagement of students in English and mathematics when exposed to blended learning and those students without blended learning

Table 4: Result of T-test Analysis on Differences between Academic Engagement of those Students from Highly Technology Integrated Schools and those from Less Technology Integrated Schools

Level of Blended learning in School	N	Mean	Std. Dev.	Std. Error Mean	df	T	Sig. (2tailed)
Less tech integration	125	2.5	0.74	0.07	248	12.50	0.000
High tech integration	125	3.6	0.42	0.04			

Table 4 shows the results of a t-test analysis comparing the academic engagements of pupils from highly technology integrated schools to those from less technology integrated schools. The t-test value was 12.50, with a degree of freedom of 248, and a p-value of 0.000. The null hypothesis is rejected since the estimated p-value (0.000) is less than the imagined p-value of 0.05. This implies that there is a significant difference in the level of academic engagement of students in English and mathematics when exposed to blended learning and those students without technology integration. More

so, the mean values 2.5 and 3.6 revealed for students from less technology integrated schools and those from highly technology integrated school respectively, justify that blended learning enhance students' academic engagement.

H₀₂: There is no significance difference in the academic achievement of students in English and mathematics when exposed to blended learning and those students without blended learning

Table 5: Result of T-test Analysis on differences between Academic Achievement of those Students from Highly Technology Integrated Schools and those from Less Blended Learning Schools

Level of Blended learning in School	N	Mean	Std. Dev.	Std. Error Mean	df	T	Sig. (2tailed)
Less tech integration	125	1.7	0.45	0.02	248	5.51	.000
High tech integration	125	3.3	0.23	0.03			

Table 5 presents the outcome of t-test analysis on the difference between academic achievements of those students from highly technology integrated schools and those from less technology integrated schools. The results revealed a t-test value 5.15, at degree of freedom of 248, p-value of 0.000. Since calculated p-value (0.000) is less than hypothetical p-value 0.05, the null hypothesis is rejected. This shows that there is a significant difference in the level of academic achievement of students in both English and mathematics, when exposed to blended learning

and those students without technology integration. Also, the mean values 1.7 and 3.3 revealed for students from less technology integrated schools and those from highly technology integrated school respectively, implies that blended learning enhance students' academic achievement.

H₀₃ : There is no significance difference in the academic achievement of male and female students in English and mathematics when exposed to technology integration.

Table 6: Result of T-test Analysis on Differences between Academic Achievement of male and female Students from Highly Technology Integrated Schools

Gender	N	Mean	Std. Dev.	Std. Error Mean	Df	t	Sig. (2tailed)
Male	50	3.65	0.45	.052	123	1.15	0.25
Female	75	3.55	0.53	.075			

The results on Table 6 reveal the outcome of t-test analysis on the difference between academic achievement of male and female students from highly technology integrated schools. The results revealed a t-test value 1.15, at degree of freedom of 123, p-value of 0.25. Since calculated p-value (0.25) is greater than hypothetical p-value (0.05), the null hypothesis is not rejected. This shows that there is no significance difference in the level of academic achievement of male and female students in English and mathematics when exposed to technology integration.

Discussion of Findings

Students from highly blended learning schools had high level of academic engagement than those from less blended learning school. Specifically, blended learning enhances the time spending on school task, raise students interest in school activities, promote punctuality, support ability to follow teachers instruction as well as allows mastering of difficult skills ($t\text{-test} = 12.50$, $df = 248$, $p\text{-value} = 0.000$). Again secondary school students from highly blended learning schools had high level of academic achievement than those from less blended learning school. Precisely, the blended learning promotes ability to solve mathematical expression, identification of figure and shape as well as ability to prove mathematical theories. It also enhance oral English, pronunciation of words as well as determination of meaning of words ($t\text{-test} = 5.15$, $df = 248$, $p\text{-value} = 0.000$).

There is no significant difference between the academic achievement of male and female students when exposed to technology integration at schools in both English language and mathematics ($t\text{-test} = 1.15$, $df = 123$, $p\text{-value} = 0.25$).

Students in highly mixed learning schools showed a higher degree of academic engagement than those in less integrated learning schools, according to the findings of this study. Students in schools where technology is integrated spend more time on school tasks and are more interested in school activities, according to the research. This could be linked to the fact that technology may be used as both an instructional tool and an incentive. This agrees with the finding by Anderson and Horrigan (2016) which established significant relationship between level of blended learning and students attention in the classroom. Also, the current study concurs with that

by Armier et al. (2016), Bahati (2015); and Auman (2011) that found strong and significant influence of educational technology on students punctuality at school, participation in school activities as well as strong interpersonal relationship.

Though, the current study differed to that by Bista (2015) and Bowman and Akcaoglu (2014) which established distractive effect of technology in the core teaching and learning activities. However, they acknowledged that the problems are not from technology but the implementation and teachers utilization. Also, Esoswo (2017) reiterated that technology application in schools can distract the attention of students as well as taking most lesson time from teachers. It was then recommended that technology meant for education should be customized with no distractive features such as games and funning future that not related to education. Above all, this study has shown that blended learning enhance learners 'engagement especially in mathematics and English language. This support the earlier conclusion drawn by Osgerby and Rush (2015) that blended learning can be used to increase the student's participation in the sensitive subjects like mathematics, English language and other science subjects. Also, Sambo (2015) found that the participation of students in English language is higher when taught using educational technology. Likewise, it was concluded by Sam-Kayode and Salman (2016) that technology can promote punctuality of students at schools as well as allows the students to master difficult skills. Earlier studies by Yusuf et al. (2015); Siddique et al. (2013); and Yusuf and Adigun (2010) and found students are better in skills development in mathematics when exposed to educational technology devices.

The findings from this study showed that secondary school students from highly blended learning schools had high level of academic achievement than those from less blended learning school. This is accordance with the finding by Yusuf et al. (2015) which established that students 'performances were significantly when exposed to various educational technology devices. Swayne (2017) found that those schools with necessary technology for teaching and learning promote higher academic performance of their students than those without modern technology. The conclusion by Yunkul and Cankaya (2017) established that schools will no longer

responsible for better students' performance if aspect of technology is being taken care of.

Recommendations

Based on the findings and the conclusion from this study, the following recommendations were made:

1. The Adamawa State Government through the State Ministry of Education should encourage the integration of technology in public secondary schools to ensure better engagement and academic performance of students.
2. The state ministry for education in Adamawa state through its concerned agencies should organise seminars and workshops for Mathematics and English language teachers on ways to utilize blended learning for the positive engagement and better performance of students.
3. The education planner in the state ministry of education Adamawa state should partners with software developers to provide various educative application that can be install on students's martphone for further study while at home.

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