Perceived Influence of Mobile Learning and Multimedia on Business Education Students’ Academic Performance in Rivers State Universities

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ABSTRACT
The study investigated the influence of Mobile learning and Multimedia on Business Education students’ academic performance in Rivers State Universities. Two (2) research questions and two (2) null hypotheses guided the study. The population of the study was 595 students, which consisted of final year Business education students in Rivers State universities. A sample size of 398 students was drawn from the population of the study. The instrument used for the study was a questionnaire developed by the researchers for data collection. The instrument was validated by the researcher’s supervisor and two information and communication technology (ICT) experts from Faculty of Business studies, Ignatius Ajuru University of Education. The test re-test method was adopted for the reliability of the instrument with the Pearson Product Moment Correlation Co-efficient (PPMCC) which yielded a reliability co-efficient of 0.77. The data collected were analyzed using the mean and standard deviation for the research questions and z- test statistical tool was used to test the null hypotheses at 0.05 level of significance. The study revealed that mobile learning and multimedia influence performance of Business Education students to a high extent. There was no significant difference in the mean responses of the respondents. Based on the findings, it was recommended that the usage of smart phones, Laptops and tablet in the classroom should be adopted in Business Education Department as it gives them unrestricted access to internet and get pedagogical materials; Departments of Business Education in Rivers State Universities should equip their studios with current educational technologies to enhance performance; and the management of the universities should also train or employ experts on Information and Communication Technology that will train their students and equip them with ICT skills.

Keywords: Mobile Learning, Multimedia, Business Education Students, Academic Performance

INTRODUCTION
Mobile learning and the multimedia have played a key role in this 21st century of evolving technology and in the enhancement of academic performance of students. They are tools, innovations and advancements utilized in diverse educational settings to enhance academic performance of students and serve varied education-related purposes (Veletsianos, 2010). Mobile learning and the multimedia do not only improve and facilitate the teaching and learning process, but also provide access to the infinite resources that are freely available online for the benefit of students who are not privileged to the traditional forms of obtaining resources such as text books outside their immediate environment. Today, Education has evolved from the traditional system of learning to the modern approach, due to the emergence of new technologies. More than eighty percent of students in the higher institution of learning are privileged to access Smartphones and more than few own laptops which give them unrestricted access to internets and create room for mobile learning (Bozalek, 2011). Mobile learning also referred to as M-learning is the learning using mobile devices. According to Cochrane and Bateman (2010), m-learning is a rapidly developing paradigm driven by exponential changes in the capabilities of mobile technologies and their integration with web 2.0 social software. Floyd (2010) defined m-learning as learning facilitated by the use of portable devices such as smart phones, laptops, tablets, etc., to access educational applications from various locations as desired. Any
mobile device that has wireless internet (wi-fi) capability may be used for mobile learning. Cochrane and Bateman (2010) noted that Mobile leaning involves the use of wireless-enabled mobile digital devices (wireless mobile devices or WMDs) within and between pedagogically designed learning environments or contexts. Mobile learning provides the opportunity to bridge pedagogically designed learning contexts, facilitate learner generated contexts, and content (both personal and collaborative), while providing personalization and social connectedness that sets it apart from more traditional learning environments (Sloan, 2006).

On the other hand, the emergence of multimedia in education has also brought easiness to the process of teaching and learning. Through multimedia practices, students can gain the knowledge and information that would be impossible to get in traditional ways; multimedia provides easiness and conveniences in education, providing students with ease of presentation during seminars and interactive sessions. Multimedia enhances students’ academic performance by providing a richer learning environment through its multiplicity of means of delivering messages to the receivers (students) in various ways via the multimedia (Rotolo, Diana & Martin, 2015).

The Academic performance is defined by students’ reporting of past semester Cumulative Grade Point Average or Grade Point Average for the current semester. The grade point average or GPA is now used by most of the tertiary institutions as a measure of the academic performance of their students. They provide a greater insight into the relative level of performance of individuals and different group of students (IGI Global, 2019). It is the final grade earned in a course that determines the academic performance of students.

This study is aimed at investigating the perceived influence of mobile learning and multimedia on Business Education students’ academic performance in Rivers State Universities. Several studies exist on mobile leaning and multimedia but little or none has considered investigating the influence of mobile leaning and multimedia on Business Education students’ academic performance in Rivers State Universities. Thus this study is considered an attempt to bridge the perceived gap in literature.

**Statement of the Problem**

In recent times, mobile learning and multimedia have supplemented the traditional forms of teaching and learning to enhance academic performance of students globally. Atkinson (2010) noted that those that push for educational reform contend that most students are often disconnected from the learning process without modern technologies and that traditional lecture-based method does not enhance students’ academic performance as much as these modern technologies. Personal observation of the researchers shows that these technologies which include mobile learning and multimedia are rarely utilized as a result of incessant power outages and sometimes lack of awareness on the part of the students. This seems to affect Business Education students’ academic performance in Rivers State Universities. Evidently, this puts a question mark in the teaching and learning process of Business Education in Rivers State universities. This study, therefore, aims at empirically investigating the influence of mobile learning and multimedia on Business Education students’ academic performance in Rivers State Universities.

**Purpose of the Study**

The purpose of the study was to investigate the perceived influence of mobile learning and multimedia on Business Education students’ academic performance in universities in Rivers State. Specifically, the study sought to:

1. Determine the extent to which mobile learning influences Business Education students’ academic performance in Rivers State universities.
2. Determine the extent to which multimedia influence Business Education students’ academic performance in Rivers State universities.

**Research Questions**

The following research questions guided the study:

1. To what extent does mobile learning influence Business Education male and female students’ academic performance in Rivers State universities?
2. To what extent does multimedia influence Business Education male and female students’ academic performance in Rivers State universities?

**Hypotheses**

The following hypotheses stated in null form guided the study at a 0.05 level of significance:
Ho1. There is no significant difference on the mean rating of male and female students on the influence of mobile learning on Business Education students’ academic performance in Rivers State universities.

Ho2. There is no significant difference on the mean rating of male and female students on the influence of multimedia on Business Education students’ academic performance in Rivers State universities.

METHOD
The study adopted the descriptive survey design. The population of the study consisted of 595 final-year Business Education students in Rivers State universities which comprise 254 students from Rivers State University and 341 students from the Ignatius Ajuru University of Education. The sample size of the study was 398 students made up of 172 males and 226 females proportionally drawn from the population of the study, which represents 67% of the population. The random sampling technique was used for the sample.

A research-designed Questionnaire Instrument titled “Perceived Influence of Mobile Learning and Multimedia on Business Education Students’ Academic Performance” (PIMOB SAP) designed by the researchers was used to obtain responses from the respondents. The questionnaire was structured on a 4-point rating scale as shown below: Very High Extent (3.50 – 4.00), High Extent (2.50 – 3.49), Low Extent (1.50 – 2.49) and Very Low Extent (0.50 – 1.49). The decision rule for the research questions was based on this mean rating. The instrument was made up of 11 items containing 2 clusters. It was validated by two Information and Communication Technology (ICT) Experts from Rivers State University and a Measurement and Evaluation Expert from Ignatius Ajuru University of Education. The reliability of the instrument was determined by adopting the test re-test method. The first and second scores of the samples were correlated using Pearson Product Moment Correlation Coefficient (PPMCC) and a reliability coefficient of 0.77 was obtained, guaranteeing the reliability of the instrument. The data was analyzed using mean and standard deviation to answer the research questions, while the hypotheses were tested at a 0.05 level of significance using z-test. The decision rule was to reject the null hypotheses where the calculated value of z was greater than the table value of z (z-tabulated). The null hypotheses were retained where the calculated value of z was less than the table value.

RESULTS
Research Question 1: To what extent does mobile learning influence the academic performance of Business Education male and female students in Rivers State universities?

Table 1: Mean Rating and Standard Deviation on the Extent Mobile Learning influence the Academic Performance of Business Education Male and Female Students in Rivers State Universities

<table>
<thead>
<tr>
<th>S/N</th>
<th>ITEMS</th>
<th>Males=172</th>
<th>Females=226</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean S/D</td>
<td>Mean S/D</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Mobile phones provide access for recording of lectures and help students to learn and improve their academic performance.</td>
<td>3.23 0.95</td>
<td>3.29 0.96</td>
<td>High Extent</td>
</tr>
<tr>
<td>2</td>
<td>Mobile phones provide access to learning via electronic books and improve academic performance</td>
<td>3.33 0.85</td>
<td>3.42 0.81</td>
<td>High Extent</td>
</tr>
<tr>
<td>3</td>
<td>Mobile phones are host to social media platforms which enable unrestricted educational materials and information sharing amongst students</td>
<td>2.87 0.90</td>
<td>3.16 0.96</td>
<td>High Extent</td>
</tr>
<tr>
<td>4</td>
<td>Search engine like Google is used to search for information on mobile phone and can enhance performance</td>
<td>3.33 0.83</td>
<td>3.56 0.61</td>
<td>High Extent</td>
</tr>
<tr>
<td>5</td>
<td>E-readers are portable and carriable devices used in reading downloaded files at any time and enhance academic performance.</td>
<td>3.26 0.78</td>
<td>3.36 0.84</td>
<td>High Extent</td>
</tr>
<tr>
<td></td>
<td>Grand Mean &amp; S/D</td>
<td>3.19 0.86</td>
<td>3.36 0.84</td>
<td>High Extent</td>
</tr>
</tbody>
</table>

Field Survey, 2018

42
Table 1 showed the respondents’ opinion on the influence of mobile learning on Business Education students’ academic performance in Rivers State universities. The findings revealed that mobile phones provide access for recording of lectures and helps students to learn and improve their academic performance (3.23 and 3.29), mobile phones provide access to learning via electronic book and improves academic performance (3.33 and 3.42), mobile phones are host to social media platforms which enable unrestricted educational material and information sharing amongst students’ and improve academic performance (2.87 and 3.16), search engine like Google is used to search for information and can enhance academic performance (3.33 and 3.56), E-readers are portable and carriable devices used in reading downloaded files at any time and enhance academic performance (3.26 and 3.36).

Research Question 2: To what extent does Multimedia influence the academic performance of Business Education male and female students in Rivers State universities?

Table 2: Mean Rating and Standard Deviation on the Extent Multimedia influence the Academic Performance of Business Education male and female students in Rivers State Universities

<table>
<thead>
<tr>
<th>S/N</th>
<th>Items</th>
<th>Males=172 Mean</th>
<th>SD</th>
<th>Decision</th>
<th>Females=226 Mean</th>
<th>SD</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Projectors are used in delivering lectures and enhance academic performance</td>
<td>3.39</td>
<td>0.82</td>
<td>High Extent</td>
<td>3.67</td>
<td>0.55</td>
<td>High Extent</td>
</tr>
<tr>
<td>2</td>
<td>The use of public address systems during lectures provides clarity of hearing and enhances performance</td>
<td>3.03</td>
<td>1.01</td>
<td>High Extent</td>
<td>3.38</td>
<td>0.87</td>
<td>High Extent</td>
</tr>
<tr>
<td>3</td>
<td>Projectors offer an excellent avenue for focusing attention on specific details on the course taught thereby improving learning conditions and academic performance</td>
<td>3.03</td>
<td>0.93</td>
<td>High Extent</td>
<td>2.69</td>
<td>1.05</td>
<td>High Extent</td>
</tr>
<tr>
<td>4</td>
<td>On-line pdf files that are downloadable can be used to gather information and enhance performance</td>
<td>3.28</td>
<td>0.96</td>
<td>High Extent</td>
<td>3.13</td>
<td>1.01</td>
<td>High Extent</td>
</tr>
<tr>
<td>5</td>
<td>Missed lectures are easily recovered as a result of the use of recordings from lectures, replay and can improve academic performance</td>
<td>3.11</td>
<td>1.03</td>
<td>High Extent</td>
<td>3.30</td>
<td>0.86</td>
<td>High Extent</td>
</tr>
<tr>
<td>6</td>
<td>Use of Phones with internet access provide extra materials for lectures creates opportunities to improve through personal research thereby improving performance</td>
<td>3.28</td>
<td>0.92</td>
<td>High Extent</td>
<td>3.21</td>
<td>0.88</td>
<td>High Extent</td>
</tr>
</tbody>
</table>

Grand Mean & S/D 3.19 0.94 3.23 0.87 High Extent

Field Survey, 2018

Table 2 showed the analysis of data (Mean and standard deviation) gathered from the respondents on the extent multimedia influence the academic performance of Business Education students in Rivers State universities. From the mean scores of the respondents it was discovered that projectors as a form of multimedia are used in delivering lectures and enhances students’ performance (3.39 and 3.67), the use of public address systems during lectures provides clarity of hearing and enhances academic performance (3.03 and 3.38); multimedia offers an excellent avenue for focusing attention on specific details on the course taught thereby improving learning conditions and academic performance (3.03 and 2.69); on-line PDF files that are downloadable can be used to gather information and enhance performance (3.28 and 3.13), missed lectures are easily recovered as a result of the use of recordings from lectures, replay and can improve academic performance (3.11 and 3.30), use of phone with internet access provides extra materials and creates opportunities to improve through personal research thereby improving performance (3.28 and 3.21).
**Hypothesis 1**

There is no significant difference in the mean responses of male and female students on the extent to which mobile phones influence academic performance of Business Education students in Rivers State universities.

**Table 3: z-test Analysis on the Extent Mobile Phone Influences Academic Performance of Business Education students in Rivers State Universities**

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean</th>
<th>St. Dev</th>
<th>N</th>
<th>P</th>
<th>z-cal</th>
<th>z-crit</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>3.19</td>
<td>0.88</td>
<td>172</td>
<td>0.05</td>
<td>1.94</td>
<td>1.96</td>
<td>Accepted</td>
</tr>
<tr>
<td>Females</td>
<td>3.36</td>
<td>0.84</td>
<td>226</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3 revealed the z-test analysis on extent mobile phones influence academic performance of Business Education students’ in Rivers State universities. The table revealed that male respondents have mean and standard deviation value of 3.19 and 0.88, while female respondents have 3.36 and 0.84 respectively. Testing the hypothesis at 0.05 level of significance, z-calculated value (1.94) and z-critical value (1.96) was obtained. Since the obtained z-cal (1.94) is lesser than z-critical (1.96), the null hypothesis is hence accepted. This implies that there is no significant difference in the mean responses of male and female students on the extent to which mobile phones influences academic performance of Business Education students in Rivers State universities.

**Hypothesis 2**

There is no significant difference in the mean responses of male and female students on the extent to which multimedia influence academic performance of Business Education students’ in Rivers State universities.

**Table 4: z-test Analysis on the Extent Multimedia influence Academic Performance of Business Education students in Rivers State Universities**

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean</th>
<th>S.D</th>
<th>N</th>
<th>P</th>
<th>z-cal</th>
<th>z-crit</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>3.19</td>
<td>0.94</td>
<td>172</td>
<td>0.05</td>
<td>0.44</td>
<td>1.96</td>
<td>Accepted</td>
</tr>
<tr>
<td>Females</td>
<td>3.23</td>
<td>0.87</td>
<td>226</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4 showed the mean scores (3.19 and 3.23), and standard deviation (0.94 and 0.87) of both groups respectively. Thus, the calculated value of z, yielded 0.44 against the critical table value of 1.96. Since the z-cal is lesser than the z-crit, the hypothesis is therefore accepted. This implies that there is no significant difference in the mean responses of male and female students on extent to which multimedia influence academic performance of Business Education students in Rivers State universities.

**DISCUSSION OF FINDINGS**

The study revealed that mobile phones gives students the opportunity to read at their own pace, mobile phones provide access to information in electronic book which enables students to learn at your own time; mobile phones are host to social media platforms which enable unrestricted educational material and information sharing amongst students’ and improve academic performance, searchable engines like Google accessed through mobile phones influence students’ academic performance at high extent. There was no significant difference in the mean responses of male and female students on the extent to which mobile phones influence academic performance of Business Education students in Rivers State universities. This is in agreement with the assertion of Twun (2014) who confirmed that there is a relationship and interaction between lecturers, students, other students and the use of mobile phone technologies to support teaching which increases satisfaction and improve academic performance though he added that mobile phones serves as a major disturbances in the class. Cochrane and Bateman (2010) supported this findings by noting that mobile learning provides the opportunity to bridge pedagogically designed learning contexts, facilitate learner generated contexts, and content (both personal and collaborative), while providing personalization and ubiquitous social connectedness that sets it apart from more traditional learning environments.
The study further revealed that projectors as a form of multimedia are used in delivering lectures thus enhances students’ understanding and performance; the use of public address systems during lectures provides clarity of hearing in a rowdy environment or classroom and improve academic performance; multimedia offers an excellent avenue for focusing attention on specific details on the course to be taught thereby improving learning conditions and academic performance; on-line pdf files that are downloadable can be used to gather information and enhance performance; missed lectures are easily recovered as a result of the use of recordings from lectures, emerging technologies provide students and creates opportunities to improve through personal research thereby improving academic performance. There was no significant difference in the mean responses of male and female students on the extent to which multimedia influence academic performance of Business Education students in Rivers State universities. This is in agreement with the views of Rotolo, Diana and Martin (2015) who posited that multimedia enhances students’ academic performance by providing a richer learning environment through its multiplicity of means of delivering messages to the receivers (students) in various ways. Khan and Shah (2015) noted that multimedia aided teaching is more effective in improving students’ academic performance than the traditional chalk and talk method.

CONCLUSION
Business education program is designed to help students to be self reliant and create businesses that will make them to be independent after graduation. It is also a program designed to help students gain the required skills and knowledge that will bring out their full potentials, transform and become useful to the society. The evidence obtained from this study has proven that mobile learning and multimedia influence the academic performance of Business Education students in Rivers State universities. Hence, universities in River State offering Business Education programs should make provision for sufficient educational technologies and give students access to these technologies, as these will enable them to explore their world academically, increase their knowledge and improve their academic performance.

RECOMMENDATIONS
Based on the findings of this study, the following recommendations were made:
1. Business education students in River State universities should be given opportunities to learn with their laptops, tablets and smart phones in their classes as they access the internet and get unrestricted pedagogical materials.
2. Management of Universities offering Business education in Rivers State should make provision of Educational technologies to enhance students’ performance.
3. Departments of Business education in Rivers State universities should equip their studio, provide internet connection for their students and permit them to have access to it as it will help them to do intensive search and expand their knowledge.

REFERENCES
