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Transforming Teaching from Conventional to Digital Learning: Students Sensitivity in Higher Education

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ABSTRACT: *This study surveyed transforming teaching from conventional to digital learning: student sensitivity in higher education. The study was a descriptive survey which adopted the ex-post-facto design. 378 respondents were selected at random from a population of 24,888, students in Delta State higher education. The study instrument was self-constructed and titled Student Sensitivity to Conventional and Digital Learning System Questionnaire (SSCDLSQ). Face and content validity were employed for the instrument and it was further subjected to Cronbach alpha to establish the reliability and a value of .85 was obtained. Graphical representation to interpret the respondents' information such as gender, academic level, and institution of learning. Research questions were analysed with mean rating and standard deviation. Hypothesis 1 was tested using a t-test. Hypotheses 2 and 3 were tested using ANOVA at a.05 significance level. Findings revealed, among others, that students display positive sensitivity to transforming teaching from conventional to digital learning. The researchers recommended, among others, that teaching should be transformed from a traditional classroom setting to digital learning, particularly for large classes, since it increases reading habits and collaboration.*

KEYWORDS: transforming teaching, conventional, digital learning, student sensitivity, technology, higher education

INTRODUCTION

Right from the day education was introduced in Nigeria by the missionaries, the method of teaching has been conventional where lecturers and students see and interacting. In this method, the lecturer visits the classroom where students are sited in preparation for the lesson. According to Eziyi, Oluwole and Owoseni, (2017) learning can occur in many contexts and the learning environment can be structured or informal as it complements each other. Education whether formal or non-formal occurs mainly in structured environments in the form of institutions for instance schools and even community centres. Meanwhile, in structured and unstructured environment, informal education takes place. Understanding how students learn and how they perform is a matter of focusing on the learning environment. (Prayoonwong & Nimnuan 2010). Learning environment entails everything that is happening in the classroom.

It with advent of technology in 1990s, digital learning has grown tremendously over the past years as technology has been integrated into education and training. Digital learning is taught electronically via the internet, intranets or multimedia platforms such as CD-ROMs or DVDs. Many users have access to direct internet connections; on-line learning is often identified with e-learning. In different ways like, synchronous interactive settings, self-paced independent study mechanisms, asynchronous interactive sessions, digital learning could be initiated (Smart & Cappel 2006). Advances in technology since the 1990s have given rise to an increased use of web-based tools in distance education. Recently, many institutions of higher learning offer digital instruction with integrated web-based instructional tools known as Digital Learning System (DLS).

Students Sensitivity in Transforming Teaching from Conventional to Digital Learning

Continuously, digital learning system has absolutely moved into higher education with novel additional programs. The blended synchronic learning (digital and conventional approaches) mode is also gaining and developing trend in higher education, while its effects on students' and lecturer's experiences are yet to be fully explored. With fast expansion of global education market, several universities seam the grades of transnational education providers or increase their transnational education offer, like blended and distance learning (Bali & Liu, 2018). In general, digital learning is seen as a lack of interactivity vis-à-vis traditional learning. Digital learning has been promoted as being more cost-effective and practical than conventional educational environments, and as providing opportunities for more learners to continue their education. Rodriguez et al. (2008) agreed that sustaining enrolment in higher education will depend upon students' learning experiences and sensitivity in digital learning system or conventional learning environment. In a similar way, Allen and Seaman (2010) explained that more than 50% of the institutions offering conventional and digital learning system courses stated that they experienced increased enrolment in both types of courses. In an earlier study, it was reported that less than half of higher education institutions indicated that digital education is essential for their long-term strategy (Allen and Seaman 2014). Smart and Cappel (2006) reported that respondents in an optional course rated digital learning as significantly higher than that offered in a conventional classroom. The above implies that students who were taught using digital learning system rated slightly positive than those in the conventional classroom rated marginally negative. Significant indices of effective communications when using digital learning system include making steady announcements, assisting learners draw acquaintances between the interactions and their learning aims, upholding and organizing records and keeping reply times as possible (Gibby, 2007).

Several previous studies compared student sensitivity and satisfaction with digital versus conventional education. Fortune, Spielman, and Pangelinan (2011) evaluated 156 students who took and enrolled in a Recreation and Tourism course at a multicultural institution in Northern California, United States, using either traditional or digital learning methods. They discovered no statistically significant variation in learning preferences between registered persons participating in the two distinct styles of instruction. Kemp and Grieve (2014) discovered that undergraduate psychology students (n=67) at an Australian university favoured traditional over digital activities. However, their research concluded that although both traditional and digital

activities may result in comparable academic achievement, students choose to complete written exercises online rather than participate in in-person conversation. Tratnik (2017) found that there are considerable disparities in student satisfaction ratings between traditional and digital English as a foreign language instruction. The studies show that students enrolled in a traditional course were typically happier with the course on various dimensions than their peers enrolled in a digital course. Although digital learning continues to expand at a fast pace, it is still in its infancy. As a result, developers and providers of digital learning need a better understanding of how students perceive and react to blended learning elements, as student perception and attitude are critical for motivation and learning, as well as how to most effectively apply these approaches to enhance learning (Koohang and Durante, 2003).

Because they provide students greater flexibility over when and where they finish their education, digital courses are a desirable choice for time- and space-constrained, non-traditional, and/or location-restricted students (Schwartzman, 2007). Students who were asked why they chose to take online courses cited a variety of factors, including cost effectiveness, convenience, and flexibility (Leasure, Davis, & Thievon, 2000), the need to accommodate work obligations (Horspool & Yang, 2010), the inability to take a traditional section of the course due to scheduling conflicts (Richards & Ridley, 1997), or the conviction that having control over the course's timing and content will improve their learning (Horspool & Yang, 2010). 1999 (Roblyer). On the other side, expanding flexibility and freedom entails expanding responsibility for establishing deadlines and maintaining ongoing advancement throughout the employment. For students who lack motivation, procrastination may have a detrimental influence on their performance or completion of a digital course (Deimann & Bastiaens, 2010). This propensity may be the cause of some students selecting traditional classrooms over online courses since they are less flexible and provide fewer options for procrastination (Leasure et al., 2000). Furthermore, growing independence can be linked to decreased engagement with instructors and classmates (Shedletsky & Aitken, 2001). In comparison to online classes, students believe that traditional courses provide a better degree of engagement with both the instructor and their classmates. Roblyer (1999) discovered a correlation between students' desire for traditional courses and their value of engagement in and communication with the instructor and other students, demonstrating that traditional courses are seen as being more engaging. Bejerano (2008) raised concerns about the lack of networking possibilities in online courses, noting that reduced participation rates often result in a decline in social and academic integration. In a different case, Burns (2013) looked at graduate students' opinions on online courses in a programme for educating teenagers. Burns' study, although concentrating on a particular academic programme, revealed significant disparities depending on students' prior experience with online courses and underlined the need to broaden the scope of the analysis beyond specific courses. Although students did not think that traditional and online classes were equivalent, Platt et al. (2014) found that prior exposure to online courses was associated with favourable perceptions of general equivalence, comparative flexibility, comparative knowledge gained, and comparative level of interaction between traditional and online classes. Students who were asked to rate their involvement levels in conventional, hybrid, and fully online courses indicated that traditional courses offered the greatest opportunities for feedback and the quickest teacher response (Faux & Black-Hughes, 2000; Leasure et al., 2000). It is

important to note that only a small number of research have analysed the actual differences in student engagement between conventional and online courses (Rocca, 2010). Students also prefer greater involvement with their lecturers, according to a prior research comparing student satisfaction with conventional vs. digital classrooms. While students gave their instructors identical ratings for how quickly they responded to questions in both the traditional and online segments, they did not differentiate between the two delivery methods. Horspool and Yang (2010) discovered a significant disparity in student perceptions of their degree of involvement with the lecturer, with a higher proportion of online students expressing disagreement or severe disagreement. Although it is difficult to generalise this finding because earlier studies were more specialised, other comparative studies have found that traditional learning environments receive higher ratings for instructional quality and student satisfaction than digital learning environments (Cryan, Mentzer, & Teclehaimanot, 2007; Johnson, Aragon, Shaik, & Palma-Rivas, 2000). The fact that today's digital courses, as a kind of distance education, evolved from yesterday's correspondence courses, which were often delivered asynchronously by mail, may help to explain why different participation rates exist. Interaction with others is minimised while preserving the chance to work at one's own speed (Bates, 2018).

The interactional sensitivity of students appears to have remained consistent despite technological advancements. According to An and Frick (2006), students continue to see traditional course communication as being quicker, easier, and more immediate than digital course communication. They also have greater expectations for traditional course engagement (Lapointe & Reisette, 2008). Results from a single research contrasting the delivery of courses online and in traditional classrooms seem to vary. Digital classrooms, in the opinion of some, increase knowledge acquisition (Koory, 2003); traditional classrooms, in the opinion of others, provide superior outcomes (Cryan et al., 2007); while yet others, claim that there are no significant differences between the two modes of learning (Clark and Jones, 2001; Hollerbach and Mims, 2007; and Johnson et al., 2000). This discrepancy could be caused by a focus on individual cases, which makes it challenging to control for the type of knowledge acquired, the comparability of teaching strategies used in different classes, demographic factors that might lead to an asymmetric representation of digital and traditional samples, or the structure of the digital classes (e.g., synchronous vs. asynchronous). The learning results of traditional courses and online courses are similar, according to meta-analyses that take these factors into consideration (Benoit et al., 2006; Bernard et al., 2004; Jahng, et al., 2007; Sitzmann et al., 2006). If the same is true for student opinions on learning hasn't been shown, however. While the majority of prior studies focused on documenting the differences in learning outcomes between traditional and digital learning, less attention has been made to the amount that students believe they are learning from each kind of course. The findings of a study on this subject showed that there were significant variations in the perceived knowledge increases between the two circumstances. For instance, Horspool and Yang (2010) contrasted digital learning with traditional learning in a course on the foundations of musical performance. Students were asked to assess how well they thought they had achieved the course's stated learning objectives in each learning scenario, which were all comparable. The authors claim that the greater number of chances for skill practise offered by conventional learning is the reason why students participating in it did much better than students participating in digital

learning. Although there are less possibilities for engagement than in traditional learning, students seem to view digital learning as being more adaptable. Despite their perceptions of better learning, students believe they are learning less in digital classrooms, according to meta-analyses. Prior and ongoing studies on digital classrooms have mostly focused on the learning objectives and student viewpoints of particular digital courses. Students' answers to a particular course's teaching methodology could have had an impact, which would have limited how broadly the results could be applied.

Technology in Digital Learning

Technological advancements have increased levels of engagement and interaction in the digital classroom (Ballard, 2009; McBrien, Cheng, & Jones, 2009; Rhode, 2009), many digital courses continue to have asynchronous components that limit interaction in favour of allowing students to work at their own pace (Parry, 2010; Vess, 2005). Technology has the ability to change traditional teaching and learning processes. It has the ability to eliminate geographic and temporal barriers to education and significantly expand access to lifelong learning. Students no longer need to be physically present in the same area at the same time in order to get instruction from an instructor. Fundamentally, new technology has the potential to influence how institutions of higher education are seen. Higher education institution is no longer essential for a higher education institution to have a physical site equipped with classrooms and residence halls where students congregate to pursue higher education. Significant forces are forcing higher education to embrace new technology (Nkedishu et al. 2021). Globalization's rapid growth, which is eroding international borders and transforming the business world, is also expanding the potential reach of schools and institutions. With the advancement of superior communication technology, institutions of higher education are no longer confined by their local student markets or instructional resources. Similarly, the growing need for opportunities for lifelong learning in order to keep current with social, economic, and technological advances creates a demand for accessible alternatives to traditional on-campus, real-time training. Additionally, competition among institutions of higher education fosters technological innovation inside colleges and universities. To avoid being eclipsed by competitors, many institutions participate actively in a technology "arms race" that requires rapid adoption of new technological developments as they become available. The alternative is to fall behind other universities in the race for the same students, faculty, and funding.

Students have access to a choice of tools that complement the job at hand and allow them to gain a better grasp of topic. Acceptance of change is also a must for effective technological integration. Technology is always developing. It's a never-ending process of learning. Computers, multi-touch screens, mobile devices, audio recorders, e-book readers, games, light tables, are examples of technology tools. Integrated technology is when it works well with the syllabus or teaching strategies (Rathore & Sonawat, 2015). Thus, rather than being an extra layer in the classroom, technology is interwoven in the lesson plan and pedagogy. In this technique, teachers plan activities and students utilize technology to create their own. For example, students utilize technology to gather information, arrange it, and display it using computer apps. Thus, the instructor is a facilitator and the student is a learner constructor.

According to Charania (2011) this method promotes student usage of technology, genuine assessments and activities involving technology in the classroom.

In schools, classrooms, and among teachers and students, there is a substantial body of research on the use of digital technology. However, most of these studies are narrow in scope, focusing on only one or two aspects of education and technology (for example, classroom cases or teacher and student technical competence), thereby isolating the object of study from the larger context of a school (Liisa & Minna, 2018). According to Freitas and Paredes (2018), technology utilized in digital learning focuses more on student-centred pedagogies that go beyond the simple transfer of information, although via new and flashy channels (video lectures, fancy-designed virtual platforms, etc.). Despite the promise of technology, its integration into higher education has been everything but smooth or rapid. At colleges and universities, several hurdles to technological innovation exist. Academic traditions, such as the faculty-centred lecture, deter many academics from experimenting with other instructional approaches, such as the internet or other communication technology. Numerous technological applications are also too costly for a large number of resource-strapped enterprises. Prior to the broad use of technology as a crucial component of institutional operations, many institutions sponsored new or improved technology using funds left over from their annual budget cycle. With technology becoming an essential and routine expense, the majority of schools are struggling to generate more funds to meet their expanding need for technical resources. (Stateuniversy.com)

Statement of the Problem

To learn how students, perceive various online courses, several research has been carried out. Prior studies looked at students' perceived flexibility or control over the learning process, apparent levels of interaction with the lecturer and/or classmates, superficial knowledge gained, and satisfaction with instruction; these variables reflect both the benefits and pedagogical issues of delivering courses digitally. These studies often assessed how these characteristics affected students' overall preferences for different educational delivery techniques. The majority of prior research suggests that students do not see digital learning similarly as they do conventional learning in terms of equivalence. It is important to note that the majority of this study focused on students' receptivity to specific digital courses, a methodological approach that limits the generalizability of the findings and may lead to conflicting results. The rest of this section is organised in accordance with the differentiation-related categories that have been shown to affect students' responsiveness to instructional tactics. Many students think that online learning is far more customizable than classroom instruction. While certain technologies are used often, others are more useful and seem to be becoming more advanced every day. These teaching devices seem to have a high price sensitivity for students who can afford them, prompting these students to choose digital learning over conventional teaching, according to interactions with certain students. Because of the above, the researcher is required to look at how teaching has changed from conventional to digital learning: student sensitivity in Delta State higher education.

Objectives of this Study

The objectives of this study is to analyse transforming teaching from conventional to digital learning: student sensitivity in Delta State higher education. In specific term, the study aimed at revealing the kind of sensitivity students' display in transforming teaching from conventional to digital learning, identify available, commonly used and most effective technology in digital learning?

Research Questions

1. What kind of sensitivity do students display in transforming teaching from conventional to digital learning?
2. What technology are available for digital learning?
3. Which of the available technology are commonly used in digital learning?
4. Which of the available technology are most effective in digital learning?

Hypotheses

1. Students' gender do not significantly differ on technology available in digital learning.
2. Students' level of education do not significantly differ on available technology commonly used in digital learning.
3. Students institution of learning do not significantly differ on available technology are most effective in digital learning?

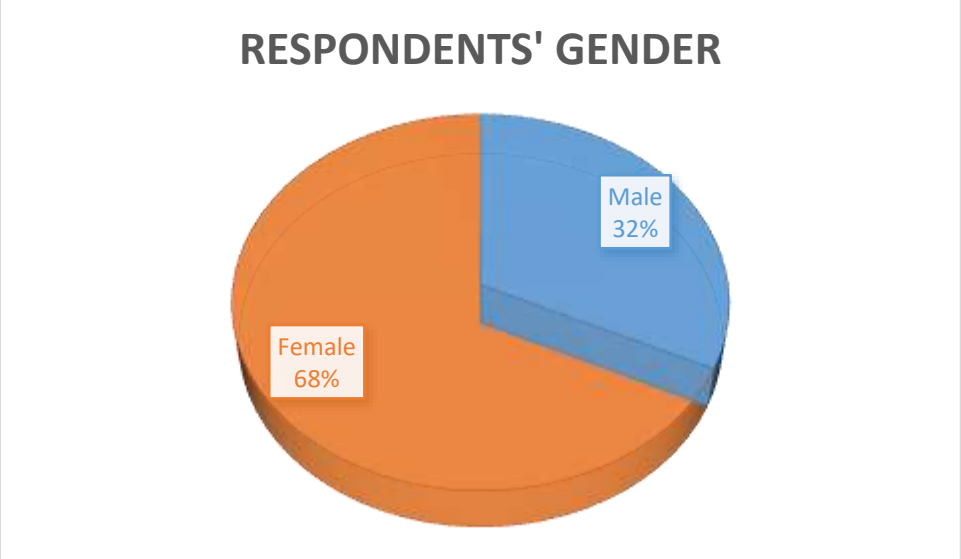
METHOD

The study is a descriptive survey adopting the ex-post-facto design. This descriptive survey was used because the study analyses transforming teaching from conventional to digital learning: student sensitivity in Delta State higher education. It also provides information that address the research questions, hypotheses and objectives of the study. The ex-post-facto design was considered since the researcher has no control over the variables of the study. This implies that the issue under investigation has occurred and cannot be manipulated. The study population entails twenty-four thousand, eight hundred and eighty-eight (24,888) students who took part on both digital and conventional learning in eight tertiary institutions in Delta State particularly during the pandemic era. From the above population, a sample of 378 respondents were drawn, representing 1.5% of the entire population. This sample was calculated using survey system (https://www.surveysystem.com/sscalc.htm). The survey system states that the greater the sample size, the more certain the researcher is that their results accurately represent the population. The higher the sample size, the narrower the confidence interval for a particular confidence level. The study instrument was self-constructed by the researcher and was titled Student Sensitivity to Conventional and Digital Learning System Questionnaire (SSCDLSQ). The instrument was divided into two section of A and B with section A dealing with respondents' information such as gender, academic level and institution of learning. While section B contains fifty (50) items in four cluster of students' sensitivity to conventional and digital learning with eleven (11) items, available technology for digital learning with thirteen (13) items, commonly used technology for digital learning with thirteen (13) items and most effective technology for digital learning with thirteen (13) items. Each of the cluster weighted

four-point scale, thus respondents were expected to rate Strongly Agree (SA=4), Agree (A=3), Disagree (D=2) and Strongly Disagree (SD=1). The respondents will indicate their level of agreement by ticking (✓) on the rating scale. In order for the instrument to measure what it is supposed to measure it was suggested to face and content validity. This was done by subjecting the instrument to screening by experts in measurement and evaluation. The experts were explicitly requested to appraise the aptness of the items in getting the required information, the quality of its linguistic and the logicality of its arrangement. The experts assessed the correctness of the linguistic, adequacy and significance of the items in addressing the research questions bearing in mind the objective of the study. Their commentaries, modifications, recommendations and suggestions made were used to amend the instrument before the final copy was produced, thus face and content validity was established. To establish the internal constancy of the instrument, it was subjected to Cronbach alpha reliability test, which is useful for multi-item scales to indicate the individual items relationship with other items and the whole items. The instrument was administered to 20 respondents outside the area of study. The scores obtained were loaded and scored for each respondent, the scores were entered into the computer and SPSS was used to run the data. Upon analysis, Cronbach alpha value of the overall multifactor Student Sensitivity to Conventional and Digital Learning System Questionnaire (SSCDLSQ) yielded a reliability index of .85. The researcher employed graphical representation to interpret the respondents' information such as gender, academic level and institution of learning. Research questions were analysis with mean rating, and standard deviation, hypothesis 1 was tested using t-test, hypotheses 2 and 3 were tested using ANOVA at .05 significance level.

RESULTS AND DISCUSSION

Figure 1: Respondents' Gender



The figure 1 is a pie chart showing respondents' gender. The figure shows that out of the sampled respondents, 32% were male while 68% were female.

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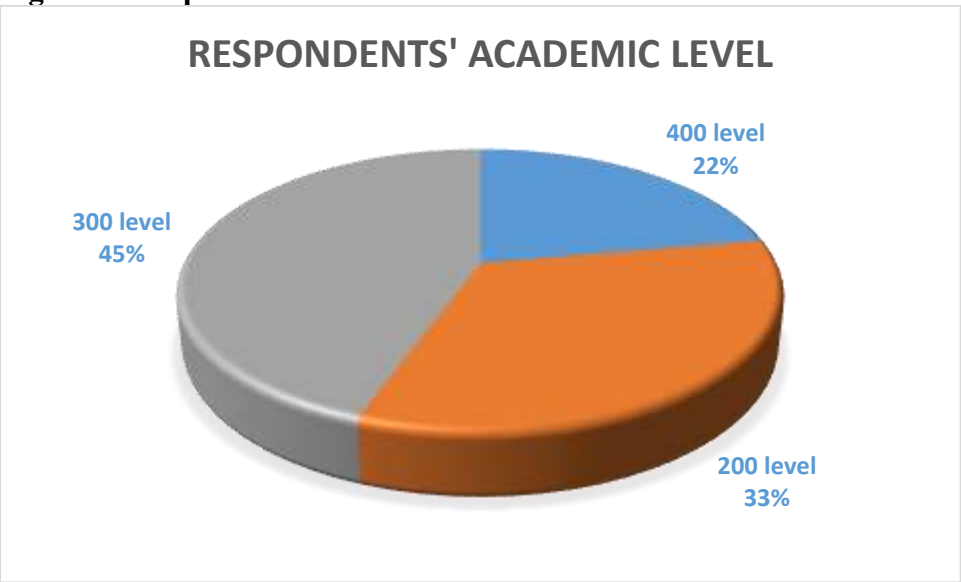
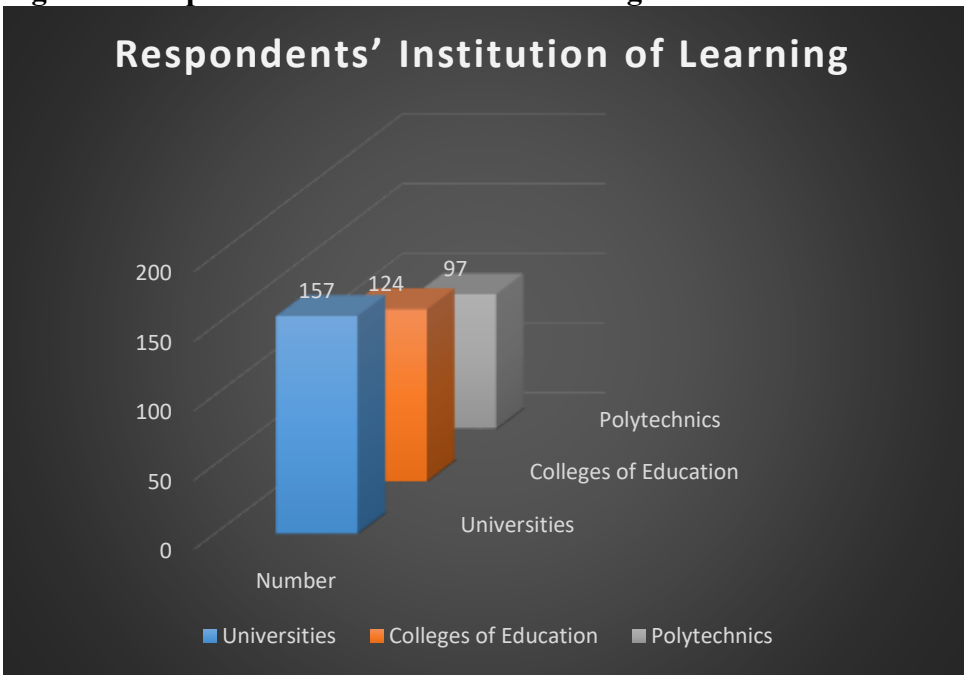
Figure 2: Respondents' Academic Level



The figure 2 is a pie chart showing respondents' academic level. The figure shows that out of the sampled respondents, 22% were in 400 level, 33% were in 200 level while 45% were in 300 level.

Figure 3: Respondents' Institution of Learning



The figure 3 is a bar chart showing respondents' institution of learning. The figure shows that out of the sampled respondents, 157(41.5%) were from universities, 124(32.8%) were Colleges of Education while 97(25.7) were from Polytechnics.

Research Question 1: What kind of sensitivity do students display in transforming teaching from conventional to digital learning?

Table 1: mean rating, standard deviation on sensitivity students display in transforming teaching from conventional to digital learning

S/N	**Transforming Teaching from Conventional to Digital Learning**	**Mean Rating**	**SD**	**Decision**
1.	Collaboration is improved with the use of digital learning.	2.85	.82	+
2.	Increase students' reading habits.	3.33	.85	+
3.	Digital learning helps incorporate different learning styles.	3.12	.60	+
4.	Digital technology creates a more engaging environment for learners.	3.20	.64	+
5.	Help students connect with their lecturers' right from home.	3.35	.77	+
6.	It prepares learners for future technological change.	3.53	.66	+
7.	Less dependent on lecturers' teaching materials	3.40	.69	+
8.	Limit students' regular class attendance.	2.85	.82	+
9.	Materials online can be downloaded with ease.	3.04	.66	+
10.	Permit instructions to be held at the students' and lecturers' convenience.	2.85	.82	+
11.	Teaching is conducted using different channels.	3.33	.85	+
Average mean rating		**3.17**	**.74**	**+**

Keys: + = Agree, - = Disagree

Table 1 revealed an average mean rating of 3.17 and SD = .74 which shows that students display positive sensitivity to transforming teaching from conventional to digital learning.

Research Question 2: What technology are available for digital learning?

Table 2: mean rating, standard deviation on available technology for digital learning

S/N	**Technology Available for Digital Learning**	**Mean Rating**	**SD**	**Decision**
1.	Computer reading programs	3.35	.58	+
2.	Computers systems	3.34	.83	+
3.	Digital learning tools	2.91	.76	+
4.	E-book readers	3.34	.67	+
5.	Games	3.04	.56	+
6.	Interactive whiteboards	3.17	.68	+
7.	Internet homework assignments	3.40	.66	+
8.	Learning management systems	3.43	.76	+
9.	Mobile devices	3.32	.80	+
10.	Multi-touch screens	2.97	.71	+
11.	Power points presentation	3.16	.63	+
12.	Projectors	3.55	.80	+
13.	Social media (e.g., WhatsApp)	3.36	.65	+

Keys: + = Agree, - = Disagree

Table 2 revealed mean rating, standard deviation on available technology for digital learning. Available result publicised that respondents agree in all the items with mean rating above the benchmark rating mean score. In specific, respondents agree on computer reading programs, computers systems, digital learning tools, e-book readers, games, interactive whiteboards, internet homework assignments, learning management systems, mobile devices, multi-touch screens, power points presentation, projectors and social media (e.g., WhatsApp) with mean rating of 3.35, 3.34, 2.91, 3.34, 3.04, 3.17, 3.40, 3.43, 3.32, 2.97, 3.16, 3.55 and 3.36 respectively. Decisively, available technology for digital learning include; computer reading programs, computers systems, digital learning tools, e-book readers, games, interactive whiteboards, internet homework assignments, learning management systems, mobile devices, multi-touch screens, power points presentation, projectors and social media (e.g., WhatsApp).

Research Question 3: Which of the available technology are commonly applied in digital learning?

Table 3: mean rating, standard deviation on commonly used digital learning technology

S/N	Technology Commonly Applied in Digital Learning	Mean Rating	SD	Decision
1.	Computer reading programs	2.05	1.03	-
2.	Computers systems	3.35	.90	+
3.	Digital learning tools	3.48	.71	+
4.	E-book readers	2.23	.96	-
5.	Games	2.40	.63	-
6.	Interactive whiteboards	3.37	.88	+
7.	Internet homework assignments	2.07	.81	-
8.	Learning management systems	3.03	.91	+
9.	Mobile devices	2.48	.81	-
10.	Multi-touch screens	2.33	.84	-
11.	Power points presentation	3.11	.57	+
12.	Projectors	3.20	.64	+
13.	Social media (e.g., WhatsApp)	3.34	.77	+

Keys: + = Agree, - = Disagree

Table 3 revealed mean rating, standard deviation on commonly applied technology in digital learning. The result shows that respondents agree on computers systems, interactive whiteboards, learning management systems, power points presentation, projectors and social media (e.g., WhatsApp) with mean rating of 3.35, 3.48, 3.37, 3.03, 3.11, 3.20 and 3.34 respectively. On the other respondents disagree on computer reading programs, e-book readers, games, internet homework assignments, mobile devices and multi-touch screens with mean rating of 2.05, 2.23, 2.40, 2.07, 2.48 and 2.33. Conclusively, commonly applied technology in digital learning are computers systems, interactive whiteboards, learning management systems, power points presentation, projectors and social media (e.g., WhatsApp).

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Research Question 4: Which of the available technology are most effective in digital learning?

Table 4: mean rating, standard deviation on most effective digital learning technology

S/N	Most Effective Technology in Digital Learning	Mean Rating	SD	Decision
1.	Computer reading programs	2.33	.65	-
2.	Computers systems	3.40	.68	+
3.	Digital learning tools	2.85	.82	+
4.	E-book readers	2.03	.66	-
5.	Games	2.35	.57	-
6.	Interactive whiteboards	3.34	.83	+
7.	Internet homework assignments	2.91	.75	+
8.	Learning management systems	3.34	.65	+
9.	Mobile devices	2.04	.56	-
10.	Multi-touch screens	3.17	.67	+
11.	Power points presentation	3.40	.66	+
12.	Projectors	3.43	.76	+
13.	Social media (e.g., WhatsApp)	2.32	.79	-

Keys: + = Agree, - = Disagree

Table 4 revealed mean rating, standard deviation on most effective technology in digital learning. The result shows that respondents agree on computers systems, digital learning tools, interactive whiteboards, internet homework assignments, learning management systems, multi-touch screens, power points presentation and projectors with mean rating of 3.40, 2.85, 3.34, 2.91, 3.34, 3.17, 3.40 and 3.43 respectively. However, respondents disagree on computer reading programs, e-book readers, games, mobile devices and social media (e.g., WhatsApp) with mean rating of 2.33, 2.03, 2.35, 2.04 and 2.32 respectively. It is therefore concluded that most effective technology in digital learning were computers systems, digital learning tools, interactive whiteboards, internet homework assignments, learning management systems, multi-touch screens, power points presentation and projectors.

Hypothesis 1: Students' gender do not significantly differ on technology available in digital learning.

Table 5: t-test analysis on students' gender and available technology for digital learning

Variables	N	Mean	SD	Df	t-Cal.	t-Crit.	Level of Sig.	Decision
Male	121	3.34	0.64	377	1.144	±1.96	.05	Not significant
Female	257	3.18	0.65					

Table 5 shows t-test analysis on students' gender and available technology for digital learning. The result shows that male respondents were 121, mean rating =3.34 and SD=.64 while female respondents were 257, mean rating=318 and SD=.65. The t-calculated value of ±1.144 was less

than t-critical value of ±1.96 at significance level of .05 on DF value of 377. This revealed that students' gender do not significantly differ on technology available in digital learning.

Hypothesis 2: Students level of education do not significantly differ on available technology commonly applied in digital learning.

Table 6: ANOVA on students' level of education and technology commonly applied in digital learning

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	182.734	2	91.367	2.250	.107
Within Groups	15225.255	375	40.601		
Total	15407.989	377			

Table 6 shows ANOVA on students' level of education and technology commonly applied in digital learning. Result of the analysis shows that F-calculated of (2,375) =2.250 is higher than the F-critical of .107 at significance level of 0.05, this implies that the null hypothesis of students' level of education do not significantly differ on available technology commonly applied in digital learning was rejected. Thus, students' level of education significantly differs on available technology commonly applied in digital learning in Delta State higher education.

Hypothesis 3: Students institution of learning do not significantly differ on available technology are most effective in digital learning?

Table 7: ANOVA on students' institution of learning and most effective technology in digital learning

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	129.866	2	64.933	.913	.402
Within Groups	26663.702	375	71.103		
Total	26793.569	377			

Table 7 shows ANOVA on students' institution of learning and most effective technology in digital learning. Result of the analysis shows that F-calculated of (2,375) =.913 is higher than the F-critical of .402 at significance level of 0.05, this implies that the null hypothesis of students' institution of learning do not significantly differ on available technology are most effective in digital learning was rejected. Thus, students' institution of learning significantly differs on available technology that are most effective in digital learning in Delta State higher education.

DISCUSSION

Finding showed that students display positive sensitivity to transforming teaching from conventional to digital learning. The reason for this finding could be that when teaching is transformed using digital it would improve collaboration, increase students' reading habits,

helps incorporate different learning styles, digital technology creates a more engaging environment for learners, help students connect with their lecturers' right from home, it prepares learners for future technological change, less dependent on lecturers' teaching materials, limit students' regular class attendance, materials online can be downloaded with ease, permit instructions to be held at the students' and lecturers' convenience and teaching is conducted using different channels. Finding showed that technology available in digital learning includes computer reading programs, computers systems, digital learning tools, e-book readers, games, interactive whiteboards, and internet homework assignments, learning management systems, mobile devices, multi-touch screens, power points presentation, projectors and social media (e.g., WhatsApp). Hypothesis tested revealed that students' gender do not significantly differ on technology available in digital learning. Finding showed that commonly applied technology in digital learning are computers systems, interactive whiteboards, learning management systems, power points presentation, projectors and social media (e.g., WhatsApp). Hypothesis tested revealed that students' level of education significantly differ on available technology commonly applied in digital learning in Delta State higher education. Finding showed that most effective technology in digital learning were computers systems, digital learning tools, interactive whiteboards, internet homework assignments, learning management systems, multi-touch screens, power points presentation and projectors. Hypothesis tested revealed that students' institution of learning significantly differ on available technology that are most effective in digital learning in Delta State higher education.

These finding supports Muthuprasada et. al. (2021) according to the findings of a survey majority of respondents (70 percent) are willing to choose online courses to handle the curriculum during this epidemic. Sun and Chen (2016) effective online classes need well-structured course materials, well-trained teachers, innovative technology, feedback, and clear directions. Hara and Kling, (1999) revealed no significant difference between face-to-face and online learning in terms of student satisfaction and academic achievement. De La Varre et al., (2010) revealed online learning has been considered a useful tool for learning, cost-effectiveness, flexibility, and the possibility of providing world-class education. This finding is in line with Muthuprasada et. al. (2021) who found that the majority of pupils chose to study online using their smartphones. Using content analysis, we determined that students prefer recorded lessons with a quiz at the conclusion of each session to enhance learning efficacy. According to the students, the adaptability and convenience of online programmes make them an appealing alternative. Zakaryia et. al., (2021) discovered that Zoom, Microsoft Teams for online interactive classrooms, and WhatsApp for out-of-class connection with students were shown to be more successful for digital learning. Rathore & Sonawat, (2015) discovered that computers, multi-touch screens, mobile devices, audio recorders, e-book readers, games, light tables, are examples of technology tools. Integrated technology is when it works well with the syllabus or teaching strategies. Freitas and Paredes (2018), revealed that technology utilized in digital learning focuses more on student-centred pedagogies that go beyond the simple transfer of information, although via new and flashy channels (video lectures, fancy-designed virtual platforms).

CONCLUSION AND RECOMMENDATIONS

In conclusion, students exhibit a favourable sensitivity to the transition from traditional learning to digital learning. This indicates that when teaching is transformed using digital technology, it will improve collaboration, increase students' reading habits, help incorporate different learning styles, digital technology will create a more engaging environment for learners, help students connect with their lecturers right from home, prepare learners for future technological change, less dependent on lecturers' teaching materials, limit students' regular class attendance, and materials online will be able to be downloaded. Because they are more efficient, computer systems, digital learning tools, interactive whiteboards, online homework assignments, learning management systems, multi-touch displays, PowerPoint presentations, and projectors should be utilised in the classroom more often. From the findings it was recommended that teaching should be transformed from traditional classroom setting to digital learning particularly for large classes. Since it increases reading habit and collaboration. Workshops should be organised for lecturers on the best platform to use for delivering their classes. Government should negotiate with service providers on the need to lessen the rate of subscription. Needed resources for digital teaching should be provided by institutions and individuals who could use theirs should also do so.

Availability of data and material

Participants in this research did not consent for their data to be made publicly accessible due to the nature of the study; as a result, supporting data are not available.

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