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Undergraduate Students' Utilization of Technologies for Self-Regulated Learning in Kwara State

Adenike Aderogba Onojah
University of Ilorin, Nigeria
temiladeadenike2015@yahoo.com

Amos Ochayi Onojah
University of Ilorin, Nigeria
haymoresonojah@yahoo.com

Olumorin C. Olubode
University of Ilorin, Nigeria
bodeolumorin@gmail.com

Abstract: *Self-Regulated Learning is a method of learning in which a learner sets goals, controls and manages his learning as well as evaluating himself. Despite numerous benefits of utilization of technology-oriented strategies for learning, studies have shown that the adoptions are often poorly adopted for use. The objectives of this study therefore were to investigate undergraduate students' utilization of technologies for SRL; and influence of gender, academic level; and school proprietorship on the utilization of technologies for SRL. This study adopted the descriptive design of quantitative survey type. The sample comprised 389 respondents across federal, state and private universities in Kwara state. Researcher-designed questionnaire was used to collect data. The instrument was validated by three lecturers and was tested for reliability. The value using crombach alpha was 0.85 on Utilization. Data collected were analyzed and tested using frequency count, mean, t-test and ANOVA while Scheffe's post-hoc was used to indicate the direction of significant differences at 0.05significant level. The findings established that undergraduate students utilize blog, Facebook, bookmark, google calendar and wiki technologies for SRL. There was no significant difference between undergraduate students' utilization of technologies for SRL based on gender, school proprietorship and students' academic level. The study concluded that It is therefore necessary to introduce students to learning strategies that is student-centered. This implies that students' performance could increase if they utilize technologies for SRL. It was recommended that Students in Nigerian universities should be encouraged to always integrate appropriate technologies for SRL in their learning process*

Keywords: Undergraduates, Utilization, Technologies, Self-Regulated, Learning

INTRODUCTION

Background to the Study

Technology includes the use of both sophisticated (highly advanced) and non-sophisticated (simple) tools and methods to work effectively. The importance of technology in people's lives is beyond measure and it has been predicted that technological literacy will become a functional requirement for people's work, social, and even personal lives soon (Danner & Pessu, 2013). Technologies present an entirely new learning environment for students, thus requiring a different skill set to be successful. Critical thinking, research, and evaluation skills are growing in importance as students have increasing volumes of information from a variety of sources to sort through (New Media Consortium, 2007). Technologies motivate both teachers and students. There appears to be some consensus that both teachers and students feel technologies use greatly contributes to student motivation for and engagement in learning. Technologies can promote lifelong independent learning skills.

The ICT environment improves the experience of the students and teachers and also helps them use intensively the learning time for better results. The ICT environment has been developed by using different software and extended experience in developing web-based and multimedia materials. ICTs play important roles in changing and modernizing educational systems and ways of learning. Evidence exists that the use of technologies can increase learner autonomy and self-regulated learning for certain learners. Students assume greater responsibility for their own learning when they use technologies, working more independently and effectively. Technologies offer learners assignments better suited to individual needs and make it easier to organize their own learning, through the use of, for example, digital portfolios (Balanskat, Blamire, & Kefala, 2006). The development, integration and substance of technologies have reshaped the teaching and learning processes in higher education. Increasing numbers of global HE institutions have adopted technologies for teaching, curriculum development, staff development, and as an aid to students learning (Olaniyi & Ademola, 2014). Adetimirin (2012) noted that technologies used by undergraduates therefore becomes inevitable for academic excellence in their various disciplines. Technologies are used to complement print resources available in their various libraries to retrieve relevant information for their achievement of academic goals.

Educational Technology has yielded several machines, materials, media men and methods which are interrelated and work together for the fulfillment of specific educational objectives (Aggarwal, 2007). These machines, materials and media have great potential for use in the educational enterprise if they are judiciously used with new functions and roles of educational personnel to bring about more efficient and effective educational training and research (Laleye, 2014). Students' use of technologies in education is expected to improve educational outcomes, increase skills in the use of technologies and decrease inequalities between groups (Corbett & Willms 2002) as employers expect graduates who will be prospective employees to possess some technological skills. Therefore, to remain relevant in the current information age, university lecturers and students have to adopt technologies to enhance their teaching, learning and research activities. The use of such technologies by the students is, however, dependent on accessibility, skills and ease of use to such technologies.

Learning is an ongoing process of thinking, acting and responding to different situations. As technology has created changes in all aspects of society, it has changed our expectations of what students must learn in order to function in the global economy. Students must learn to navigate large amounts of information, analyze and make decisions, and aster new increasingly technological knowledge domains. It is important that students grow into lifelong learners, collaborating with others to accomplish complex tasks and effectively using different systems for representing and communicating knowledge to others.

Tertiary institution is the post-secondary section of the national education system which is given in universities, polytechnics and colleges of education, advanced teacher training college, and correspondence colleges. Ekeke and Telu (2017) posited that the purpose of education is not merely to enable students to accumulate facts. A major goal is that by the time students finish school, students should be able to solve problems that will make them happy and successful in life, and contribute to society. In order to achieve this goal, students need to develop high-level thinking skills through self-regulation of learning.

Goal-setting is a central aspect of self-regulated learning because students' goals are not always oriented toward learning but instead, students may be oriented toward avoiding work or other aspects such as competition among peers. Self-regulated learning is learning that is guided by metacognition (thinking about one's thinking), strategic action (planning, monitoring, and evaluating personal progress against a standard), and motivation to learn. Metacognition was regarded as a valuable term because it emphasized how the "self' was the agent in establishing learning goals and tactics and how each individual's perceptions of the self and task influenced the quality of learning that ensued (Auvinen, 2015). Most importantly, self-regulated learners also manipulate their learning environments to meet their needs (Kolovelonis, Goudas, & Dermitzaki, 2011). For example, researchers have found that self-regulated learners are more likely to seek out advice (Clarebout et al., 2010) and information (De Bruin et al., 2011) and pursue positive learning climates (Labuhn, Zimmerman, & Hasselhorn, 2010), than their peers who display less self-regulation in the classroom.

According to some authors (Oblinger & Oblinger, 2005), the Internet generation presents distinct ways of thinking, communicating and learning. Students want to actively engage in their own learning. In this sense, they must learn to self-regulate their learning and need to engage in interactive learning environments with appropriate feedback and opportunities to choose tasks and develop their information literacy. Additionally, this Internet generation prefers to complete academic work in peer groups. This type of social participation and interaction facilitates their understanding of how to use technological resources. Furthermore, most learners use technological resources for tasks outside their school therefore, they are familiar with these tools when they work with them in a classroom context (e.g. the Internet and the Web).

Statement of the Problem

Serious obstacles in integrating technologies in teaching and learning processes are prevalent and there are no holistic solutions to the predicaments (Olaniyi & Ademola, 2014). Instead of cramming,

students who engage in SRL will willingly dedicate enough time to the task. Rather than wasting time on social media associating with friends, students with the use of technologies will first analyze the task and determine what is required to accomplish that task, set goals, plan, implement goals, monitor progress, and evaluate the achievement. Technologies help a lot in time management. Where students are full of social and religious activities, technologies will go a long way to help in managing time and help students to strike a balance between academics and other activities.

Prensky (2001) found that young people of the digital native generation possess sophisticated knowledge of and skills with information technologies. Whether Nigerian students use these facilities, knowledge and skills for self-regulated learning is yet to be empirically ascertained. Nevertheless, it is uncertain that all these digital natives are aware of all technologies for SRL and possess adequate skills to utilize these technologies thereby having a positive attitude toward all technologies for SRL.

However, most of the studies on the status of self-regulated learning in universities were confined to developed countries like the United States of America, the United Kingdom, and Australia with very few studies in developing countries like Nigeria. Hence the study, therefore, investigated undergraduate students' utilization of technology for self-regulated learning in Kwara State, Nigeria. The influence of gender, academic level and school proprietorship on Utilization were also investigated.

Purpose of the Study

The main purpose of this study was to investigate undergraduate students' utilization of technology for self-regulated learning in Kwara State. The study specifically:

1. examined undergraduate students' utilization of technologies for SRL;

2. examined male and female undergraduate students' utilization of technologies for SRL;

3. examined undergraduate students' utilization of technologies for SRL based on students' academic level;

4. examined undergraduate students' utilization of technologies for SRL based on school proprietorship.

Research Questions

In order to guide this study, the following research questions were raised:

1. Are undergraduate students utilizing technologies for SRL?

2. What is the difference in male and female undergraduate students' utilization of technologies for SRL?

3. What is the difference in undergraduate students' utilization of technologies for SRL based on students' academic level?

4. What is the difference in undergraduate students' utilization of technologies for SRL based on school proprietorship?

Research Hypotheses

The following hypotheses were formulated for and tested in the study:

Ho1: There is no significant difference between male and female undergraduate

students' utilization of technologies for SRL.

Ho2: There is no significant difference in undergraduate students' utilization of technologies for SRL based on students' academic level.

Ho3: There is no significant difference in undergraduate students' utilization of technologies for SRL based on school proprietorship.

Scope of the Study

This study focused on the identification of SRL of undergraduate students' utilization and level of study towards the technology for self-regulated learning in Kwara State. The technologies in relation to this study include web 2.0, e-portfolio, Internet, and the Learning Management System (LMS) which can be used to enhance learning. Descriptive research type would be applied in the study to source, process and analyze the information collected through the use of adapted questionnaire. This study was conducted in Kwara State. Three hundred and ninety-eight undergraduate students were sampled using purposive sampling based on availability of students in the universities at the time of visit. Sample was restricted to undergraduates in Kwara State. Questionnaire was used as instrument to obtain data for the study. Means, standard deviation, percentage, t-test and Analysis of Variance (ANOVA) were used to analyze the data using Statistical Package for Social Sciences (SPSS).

Literature

One other individual difference which affects students' success is the ability to manage themselves. The ability to manage themselves according to Bandura (2001) as cited in Alwisol (2010) is known as self-regulation or self-regulated learning. Students with self-regulation ability know when and how students protect themselves from distractions that disrupt the learning process. Students with good self-regulated learning know how to handle themselves when they feel sleepy and lazy. Also, Orimogunje (2014) noted that students who have good self-regulated learning, know how to protect themselves from interference that can disrupt the learning process.

Self-regulating students, according to Zimmerman (2008), are those who actively employ a variety of learning behaviors or strategies to achieve self-set goals. These students also rely on affective, cognitive, motivational, and behavior feedback to modify or adjust their behaviors and strategies when initially unable to attain their goals. Self-regulated learning (SRL) can be defined as a process whereby learners personally activate and sustain cognitions, affects, and behaviors that are systematically oriented toward the attainment of personal goals (Zimmerman & Schunk, 2011).

Bloom (2013) focused on the place of goal setting and self-monitoring in self-regulated learning. He mentioned that self-regulated learning strategies enables students to make higher academic achievements, make greater effort to solve problems, overcome obstacles, and motivate them to learn. Goal setting and self-monitoring are two of these strategies and help them to be aware of their learning, judge their learning ability, and adjust themselves according to their own evaluation. Self-regulated learning increases self-confidence, self-efficacy, and motivation, so it results in active participation and increased collaboration.

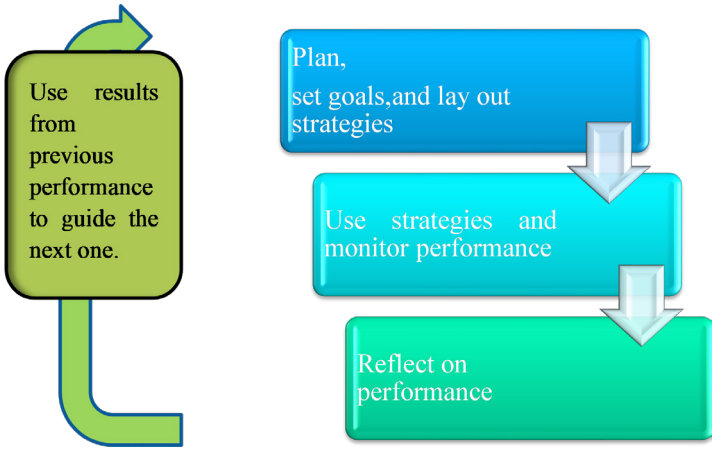

Figure 1

The Cycle of Self-Regulated Learning

Source: Kirk (2016)

The cycle of self-regulated learning in figure 1 showed steps that students can learn throughout the process. Self-regulated learning is a cyclical process, wherein the student plans, monitors performance and then reflects on the outcome. The cycle then repeats as the student uses the reflection to adjust and prepare for the next task. Students started using social media and web tools prior to the academicians. Hence as noted also by Kumar (2006), as digital natives are rapidly switching to new technologies, the higher education system need to turn up, use and integrate these tools and technologies in the education system so that the system could be learner centred as it is expected to be. A growing body of research shows that learning technologies can engage learners in self-regulated cycles of learning (Kitsantas 2010). Similarly, Dabbagh and Kitsantas, (2004), stated specifically that research findings clearly demonstrate that learning technologies in higher education contexts have the potential to support different processes of self-regulation which may lead to improved learning.

Lal (2012) asserted it has been observed that the varied educational background of the students coming together in higher education calls for a need to integrate web 2.0 tools in higher education. The important characteristic of web technology is its interactivity and this feature has attracted educators worldwide (Tyagi, 2012). Moreover, some students may have work experience as well. This should in turn result in developing competencies in them to create their own understanding and insights regarding a concept and sharing it with others. Also, it can provide a platform for instructors and students to create their own content in different formats and share those using tools like blogs, wikis, social bookmarking, and social networks. All these tools are helpful in reducing the cost of higher education; widening access to educational opportunities; and enhancing the quality of learning (Curran, Murray & Christian, 2007). Web technology-based education would allow a learner-centric approach that brings out learners' active participation.

The convergence of technologies is increasingly having more influence on all aspects of the society as it has become an integral part of the daily lives of many people. It has had a transformative impact on the mode of information sharing and access globally. Information and knowledge disseminated through the slow process of oral communications or with paper materials can now be transferred rapidly from an individual to an infinite number of users through a number of media and formats (Bankole & Oludayo, 2012). Woreta, Kebede, and Zegeye, (2013) further explained that when compared with developed countries, the use of ICT in education programs in developing nations is relatively limited. Some of the reasons mentioned for such gaps are that developing countries face shortages of financial resources, limited internet access, lack of trained teachers, and the lack of proper policies (citation needed). Nevertheless, there has been growing interest in the use of ICT in educational settings in developing countries. Furthermore, in recent years, several countries have attempted governmental initiatives to expand access to ICT in higher institutions and faculties. These initiatives have often been associated with a broader educational quality improvement agenda.

Mishra (2009) studied the use of the Internet at the University of Maiduguri, Nigeria, the findings showed that Internet was very important for 60.8% of the respondents, with 74.6% using the Internet for research; 71.5% mentioned Google as their preferred search engine and concludes that necessary facilities should be put in place for faculty and students to make optimal use of information resources available on the Internet. In agreement with this, Bello, Elshafie, Yunusa, Ladan, Suberu, Abdullahi, and Mba, (2017) revealed that the majority of students used the internet for research purposes, this result could be attributed to the nature of this study as it is conducted in the faculty where research and literature search are the common self-directed learning among student to abreast themselves with the current knowledge. This was against the submission of Bankole and Oludayo (2012) who found out that majority of undergraduate students of Olabisi Onabanjo University, 90.6% used technologies for purpose of communication, 43.5% used technologies for doing class assignments, 32.9% indicated that they were using it to update knowledge. About 27% stated that they used it to supplement lecture notes given by their course lecturers, while 17.2% indicated that they used it for their research projects. Other uses mentioned by over 10% of respondents were to download free soft wares (12.7%) and for entertainment (10.4%). The uses mentioned by less than 10% of the respondents included seeking for scholarship opportunities, obtaining health information, travel arrangements, shopping/ purchasing and for online banking. The interview showed that students use Internet for educational activities if they are referred to it by their lecturers or when they are specifically directed to do class assignments with materials from the Internet. It is obvious that the students make use of email, chatting and instant messaging while they rarely used discussion groups and web boards, TELNET. FTP and FAQ.

The unique features of mobile technology supplement traditional learning and reinforcement for the students. Mobile technologies are used as search engines, whereas other features are hardly used for learning purposes. The success of using mobile technology will depend on the understanding of how these features can be used for educational purposes. Therefore, owning a mobile phone is not an assurance that students will use mobile phones for learning purposes (Jambulingam &

Sorooshian, 2013). Davi, Mark, and Girish (2007) also submitted that the use of blogs has become popular among colleges because faculty members have integrated blogs into their courses to enhance class discussion. The conclusion was that liberal learning depends on students taking responsibility for their education while instructors in any discipline can use blogs to begin conversations about courses materials before and after classes and as such enhance active learning. It was stated further that the idea behind blogging makes it an improvement for classroom use over the discussion groups because one can visit a blog occasionally to see if there is any new content posted by visitors to the blogs because of its "publish subscribe" model in which the author publishes content and the subscribers use a program known as aggregator which checks the blog from time to time to notify the subscriber whenever new content are posted.

Other technologies include podcasting which is of average use among the students of the two universities. When students were asked whether they registered with any of the social sites, the response was enthusiastic as 90.7% and 85.3% of the responses from Crescent and Caleb universities used Facebook for social activities. This was followed by 61.6% and 65.3% of followers of twitter from both universities (Diyaolu & Rifqah (2015). In Hargittai and Shafer's study (2006), female self-assessed their skills significantly lower than men evaluated their skills. Chyung (2007) stated that female students improved their self-efficacy significantly more and scored significantly higher on the final exam than male students. Previous studies illuminated the influence of gender on the attitude of undergraduates on the use of technologies for learning, however, few researches have been able to find out the influence of gender on undergraduates' use of technologies for self-regulated learning.

According to Darwin (2011) the first year is about socializing into the university culture, igniting a lifelong spirit of inquiry and building foundational knowledge. Learning activities that develop communication skills, academic literacy and time management in a way that students enjoy are essential for the first year. First year students largely rely on lecturers to tell them what to do, but at the same time start to build independent learning skills from the first day; largely accept knowledge, skills and attitudes they encounter; and level of critical analysis is relatively low. Also, Nelson, Kift, Humphreys and Harper (2006) identified that students in their first year have special learning needs arising from the social and academic transition they are experiencing. From multiple starting points, all students are on a journey to becoming self-managing and self-directed learners and the first-year curriculum must help get them there. The introduction of e-learning and online resources provides a greater degree of flexibility in providing support for the diverse demands of these students (Lyons –Warren (2016).

At three hundred (300) level, Darwin (2011) was of the opinion that students are expected to engage with advanced material in a manner that requires them to evaluate increasingly complex situations, in increasingly specialized areas. Skills in analysis, synthesis and evaluation more fully developed. Some of the nature of students at this level are critical thinking; demonstration of ability to seek creative responses across disciplines; extraction of deeper meaning and purpose of the task; thinking holistically; ability to cope with new problems in new contexts; and application of the process of problem solving in a multidisciplinary context but with a dominant cause of the problem that is, identify problem, break it down into parts and solve the problem. The third year

is about consolidation of knowledge and the development of an independent professional. At this level the lecturer fulfills more of a facilitator and mentor role. Students should be capable of solving complex problems in their subject area as well as problems in less familiar areas (Australian Qualifications Framework, 2010). Lyons–Warren (2016) revealed that third-year students develop learning goals at the beginning of the session.

The benefits of using learning technologies as explained by Kitsantas (2013) have been well documented in terms of their effects on learning outcomes (Wang, Calandra, Hibbard, & McDowell Lefaiver, 2012), collaboration and social feedback (Dabbagh & Kitsantas, 2009), and students' learning approaches (Jairam & Kiewra, 2010; Lee, Lim, & Grabowski, 2010). Researchers have also examined how learning technologies can support or promote student self-regulated learning (Kitsantas & Dabbagh, 2011; Dabbagh & Kitsantas, 2012). For example, research evidence shows that self-regulated learning processes such as goal-setting, self-monitoring, and self-evaluation can be supported by using experience and resource sharing tools (e.g., blogs and wikis) whereas communication tools can enhance help-seeking behaviors. In turn, technology-enriched learning designed to enhance student self-regulation and motivation facilitates academic performance and increases positive attitudes towards learning (Perry & Winne, 2006; Winne, Nesbit, Kumar, Hadwin, Lajoie, Azevado & Perry, 2006). Dahlstrom (2015) ascertained that there are no meaningful differences by institution type or student demographic characteristics when it comes to general preparedness to use technology upon college entry.

METHODOLOGY

This chapter presents the research methods that were used to carry out the study. These were discussed under the following sub-headings: Research design, sample and sampling techniques, research instrument, validation of the research instrument, the procedure for data collection, and data analysis techniques.

Research Design

This study employed a descriptive survey of the quantitative method. This is because it involves the systematic collection and analysis of data collected from a large population in order to describe the characteristics of members of the population based on the phenomenon under consideration for the study without involving any external manipulations. This enabled the researcher to collect a large number of information from the respondents on the awareness of attitude towards and utilization of technologies for SRL in Kwara State.

Sample and Sampling Techniques

The population for the study consists of all undergraduate students in Kwara State. The target population consists of undergraduate students across all faculties in Kwara State. A multistage sampling technique was used to select respondents across the institutions. Three universities which include a federal university, a state university, and a private university in Kwara State were selected purposively based on school proprietorship. 200-level and 300-level students were purposively selected in these universities because 100-level students are freshers who are still new in the system, and 400, 500 or 600--level students are rounding off their programs in school therefore these students may not be around at the time of visit. The proportional sampling strategy is shown in table 1. Three hundred and ninety-eight (398) respondents form three universities comprising

348 from a federal university, 27 from a state university, and 23 from a private university. Data would be collected on variables of gender and academic level by ensuring that the questionnaire would be distributed to all students.

Table 1

Undergraduate Students' Population and their Proportion Sample Size

S/N	Name of Universities	Population	Estimated Sample Size
1.	University of Ilorin	52, 089	348
2.	Kwara State University	3,891	27
3.	Alhikma University	3,534	23
	Total	**59,514**	**398**

Source: Academic Unit

Out of 59,514 which is the total population, 398 undergraduates from University of Ilorin, Ilorin, Alhikma University and Kwara State University, Malette were randomly sampled. As shown in table 1, the total number of students in the three universities was 59,514 and this falls within 50,000 and 100,000 on the Isreals' model (2013) for determining size. Based on this, 398 respondents can be acquired from a population of fifty thousand at 95% confidence levels and 5% margin error. Thus, the sample for each university was calculated and the figures arrived at is presented in table 1.

Research Instrument

A researcher designed questionnaire was used to elicit information from the respondents. It consisted of two sections. Section A required demography of the respondents' personal information to know if gender and students' academic levels have influence on their awareness and attitude towards utilization of technologies for SRL, Section B consisted ten items to elicit information from the respondents based on utilization of technologies for SRL. Yes and No response mode was adopted for Section D.

Validation of the Research Instrument

The instrument was validated for face and content validity by the three expert lecturers in the Department of Educational Technology at the University of Ilorin. The various suggestions after the scrutiny were used to modify the instrument. In order to ascertain the consistency of the instrument, the instrument was pilot tested on twenty-five undergraduate students of Ladoke Akintola University of Technology in Ogbomoso, Oyo State which was not part of the study sample. The data collected were subjected to reliability analysis, and Cronbach's Alpha statistical tool was used to ascertain the reliability result at 0.05 level of significance. The result recorded 0.85 on Undergraduate Students' utilization of Technologies for Self-Regulated Learning. This shows that the instrument is highly reliable and can thus be reused by other researchers.

Procedure for Data Collection

The appropriate authorities' permission was sought before the instruments were

administered with the help of a research assistant from each of the institutions of the study. Data were collected through the questionnaire that was distributed to the respondents' schools. The questionnaire was collected immediately from the students after filling them. In order to ensure ethical issues, no information which is not relevant to the purpose of this study was collected from the respondents in the study. The respondents were not coerced in filling the questionnaire as they were given the opportunity to fill it at their convenience. Also, all authors cited in this work were properly referenced.

Data Analysis Techniques

Data collected through the questionnaire were subjected to descriptive and inferential statistics, Descriptive statistics (percentage, count and mean) were used to answer research questions 1-9, Inferential statistics of t-test was used to test hypotheses 1, and 2, While Analysis of Variance (ANOVA) was used to test hypotheses 3. All hypotheses were tested at 0.05 level of significance.

RESULTS AND FINDINGS

This chapter presents the analysis and results obtained from the data based on research questions and research hypotheses stated in chapter one. The results are preceded by the demographic information of the respondents. Out of the 398 copies of questionnaires that were administered, 389 were properly filled and returned amounting to 97.7% return rate.

Results on Demographic Information

Respondents' information based on school ownership is shown in table 2, out of the 389 respondents, 342 (87.9%) were from federal-owned institutions, 26 (6.7%) were from state-owned institutions and 21 (5.4%) were from private-owned institutions. The demographic information based on school ownership was further revealed in a chart as shown in figure 2.

Table 2

Respondents' Data by School Ownership

School Ownership	Frequency	Percent	Cumulative Percent
Federal	342	87.9	87.9
State	26	6.7	94.6
Private	21	5.4	100.0
Total	389	100.0	

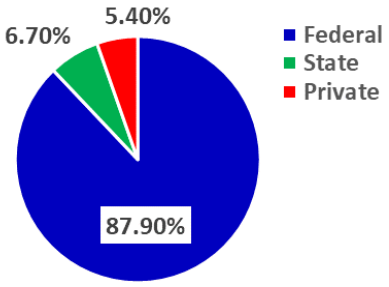

Figure 2:
Chart on Respondents' School Ownership

Table 3

Respondents' Data by Gender

Gender	Frequency	Percent	Cumulative Percent
Male	198	50.9	50.9
Female	191	49.1	100.0
Total	389	100.0	

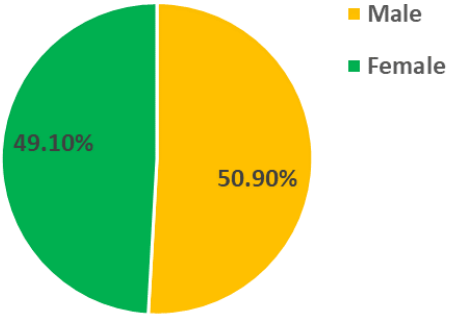

Figure 3
Chart on Respondents' Gender

As indicated in table 3, out of the 389 respondents in the study, 198 (50.9%) were male while 191 (49.1%) were female. This is shown graphically in figure 3.

Table 4

Respondents' Data by Students' Academic Level

Level	Frequency	Percent	Cumulative Percent
200Level	154	39.6	39.6
300Level	235	60.4	100.0
Total	389	100.0	

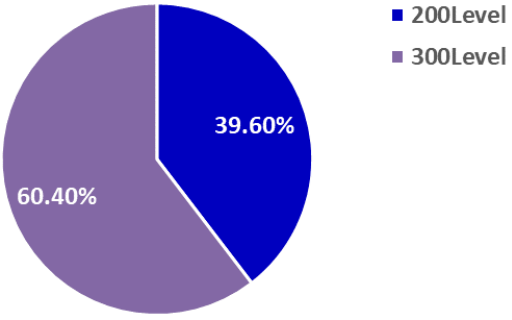

Figure 4
Chart on Respondent Students' Academic Level of Study

Respondents' Data by Students' Academic Level was indicated in table 4. It revealed that out of the 389 respondents, 154 (39.6%) were in their 2nd-year academic calendar while the rest were in their 3rd year. Figure 4 also revealed these respondents' information based on their level or year of study.

Research question one

Are undergraduate students utilizing technologies for SRL?

Table 5

Utilization of Technologies for SRL

S/N	Technologies for SRL	Yes		No		Total
		N	**%**	**N**	**%**	
1)	I utilize blogs to share my content	200	51.4%	189	48.6%	389 (100%)
2)	I utilize podcasts to upload my audio works online	111	28.6%	278	71.5%	389 (100%)
3)	I utilize e-portfolios to organize my materials digitally	158	40.6%	231	59.4%	389 (100%)
4)	I utilize Facebook to improve my self-efficacy	280	72.0%	109	28.0%	389 (100%)
5)	I utilize bookmarks for planning	241	62.0%	148	38.0%	389 (100%)
6)	I utilize collect or compile features for strategizing my learning	188	48.4%	201	51.7%	389 (100%)
7)	I utilize google calendar to manage my time	198	50.9%	191	49.1%	389 (100%)
8)	I utilize LMS tools to assess and evaluate myself	122	31.4%	267	68.6%	389 (100%)
9)	I utilize wiki to allow my mates all over the world to comment on my work	198	50.9%	191	49.1%	389 (100%)
10)	I utilize the virtual world for peer mentoring	159	40.9%	230	59.1%	389 (100%)

Table 5 presents the result of undergraduate students' utilization of technologies for SRL. It showed that out of 389 respondents, 200 (51.4%) respondents utilize blogs to share content, 280 (72.0%) respondents utilize Facebook to improve their self-efficacy on academic works, 241 (62.0%) respondents utilize bookmark for planning and 198 (50.9%) respondents utilize google calendar to manage time. Also, 198 (50.9%) respondents utilize wiki to allow their mates all over the world to comment on their work. However, 111 (28.6%) respondents utilize podcasts to upload audio works online, 158 (40.6%) respondents utilize e-portfolios to organize materials digitally, 188 (48.4%) respondents utilize collect or compile features for strategizing learning, 122 (31.4%) respondents utilize LMS tools to assess and evaluate themselves and 159

(40.9 %) respondents utilize virtual world for peer mentoring. The findings established that the majority of the respondents utilize blogs, Facebook, bookmark, google calendar, and wiki technologies for SRL.

Research question two

What is the difference in male and female undergraduate students' utilization of technologies for SRL?

Table 6

Difference in Male and Female Utilization

Gender	N	% of Total N	Mean	Mean Difference
Male	198	50.9%	0.48	0.01
Female	191	49.1%	0.49	
Total	389	100.0%	0.48	

The differences in male and female undergraduate students' utilization of technologies for SRL was investigated and the results were presented in table 6. It revealed that male respondents had a mean score of .48 while their female counterparts had a mean of 0.49. The mean difference of 0.01 showed that there is a difference in male and female undergraduate students' utilization of technologies for SRL in favour of the female respondents.

Research question three

What is the difference in undergraduate students' utilization of technologies for SRL based on level?

Table 7

Difference in Utilization of Technologies for SRL Based on Level

Level	N	% of Total N	Mean	Mean Difference
200Level	154	39.6%	0.47	0.01
300Level	235	60.4%	0.49	
Total	389	100.0%	0.48	

Table 7 presents the results on the difference in undergraduate students' utilization of technologies for SRL based on their level of study. It indicated that the 200-level respondents had a mean value of 0.47 while the 300-level respondents had a mean value of 0.49. The mean difference of 0.01 proved that there is a difference in undergraduate students' utilization of technologies for SRL based on the level of study in favour of 300-level students.

Research question four

What is the difference in undergraduate students' utilization of technologies for SRL based on school proprietorship?

Table 8

Difference in Utilization Based on School Proprietorship

School Proprietorship	N	% of Total N	Mean	Mean Difference
Federal	342	87.9%	0.50	
State	26	6.7%	0.42	0.07
Private	21	5.4%	0.36	
Total	389	100.0%	0.48	

The difference in undergraduate students' utilization of technologies for SRL based on school proprietorship was investigated and the results were presented in table 8. It indicated that federal school respondents had a mean of 0.50, 0.42 for state-owned institutions, and 0.36 for privately-owned institutions. The mean difference of 0.07 proved that there was a difference in undergraduate students' utilization of technologies for SRL based on school proprietorship in favour of federal-owned institutions.

Hypothesis one

Ho1: There is no significant difference between male and female undergraduate students' utilization of technologies for SRL.

Table 9

t-test of Male and Female Students' Utilization of Technologies for SRL

Gender	N	Mean	Std. Deviation	Df	t	Sig (2-tailed)	Decision
Male	198	.47727	.282733	387	-0.454	0.650	Not Rejected
Female	191	.49005	.271750				
Total	389						

The significant difference between male and female undergraduate students' utilization of technologies for SRL was revealed in Table 9. The result showed that, t (387) = -0.45, p > 0.05. The null hypothesis was not rejected. This is because the result of the t-value of 0.45 resulting in 0.65 significance value was greater than 0.05 alpha value. Thus, the null hypothesis, no significant difference between male and female undergraduate students' utilization of technologies for SRL was not rejected. It can therefore be established that there was no significant difference between male and female undergraduate students' utilization of technologies for SRL

Hypothesis two

Ho2:There is no significant difference in undergraduate students' utilization of technologies for SRL based on level.

Table 10

t-test of Students' Utilization of Technologies for SRL based on Students' Academic Level

Level	N	Mean	Std. Deviation	Df	t	Sig (2-tailed)	Decision
200Level	154	.46818	.305228	387	-0.885	0.377	Not Rejected
300Level	235	.49362	.257207				
Total	389						

From table 10, it can be deduced that there was no significant difference in undergraduate students' utilization of technologies for SRL based on students' academic level. This is reflected in the results of the hypotheses tested; df (387) t= -0.89, p> 0.05. Thus, the hypothesis was accepted. This means that the hypothesis states there was no significant difference in undergraduate students' utilization of technologies for SRL based on level is accepted. This, therefore, means that undergraduate students' utilization of technologies for SRL does not differ significantly based on students' academic level.

Hypothesis Three

Ho3: There is no significant difference in undergraduate students' utilization of technologies for SRL based on school proprietorship.

Table 11

ANOVA on Utilization of Technologies for SRL based on School Proprietorship

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Decision
Corrected Model	.514a	2	.257	3.386	.035	
Intercept	18.094	1	18.094	238.520	.000	
School Proprietorship	.514	2	.257	3.386	.035	Not Rejected
Error	29.281	386	.076			
Total	120.750	389				
Corrected Total	29.795	388				

a. R Squared = .017 (Adjusted R Squared = .012)

Table 11 shows the results of significant differences in undergraduate students' utilization of technologies for SRL based on school proprietorship. It indicated that F (2, 386) = 1.52, p>0.05, which means there was no significant difference in undergraduate students' utilization of technologies for SRL based on school proprietorship. Hence, the null hypothesis is hereby not rejected.

Discussions

The majority of the respondents utilize blogs, Facebook, bookmarks, google calendar, and wiki technologies for SRL. This is in support of Laleye (2014) who stated that machines, materials and media have great potential for use in the educational enterprise if they are judiciously used with new functions and roles of educational personnel to bring about more efficient and effective educational training and research. Eberechukwu (2016) also indicated that the students only use social networking sites like Facebook, YouTube and Wikis to communicate and share pictures with friends. These technologies if appropriately utilized could facilitate learning and improve performance.

Female respondents utilize technologies for SRL more than their male counterparts. Egbo, Okoyeuzu, Ifeanacho, and Onwumere (2011) concluded that female students tended to accept the use of ICT more than their male counterparts. There was a difference in undergraduate students' utilization of technologies for SRL based on school proprietorship in favour of Federal-owned institutions. Prensky (2001) found that young people of the digital native generation possess sophisticated knowledge of and skills with information technologies.

There was no significant difference between male and female undergraduate students' utilization of technologies for SRL. Morahan (2019) found out that male and female have different ways of studying (study habit). There was no significant difference in undergraduate students' utilization of technologies for SRL based on students' academic level. There was no significant difference in undergraduate students' utilization of technologies for SRL based on school proprietorship. Olumorin, Onojah and Oyebowale (2016) posited that school proprietorship determines to a large extent the provision of an enabling environment for the adoption and integration of technologies in education.

The findings have strong implications for teaching and learning of undergraduate students in Nigeria. There will be boundless improvement if students utilize technologies for SRL for their learning.

Recommendations

On the bases of the findings, the following recommendations were made: Government, Non-Governmental Organizations, as well as other stakeholders should endeavor to provide all Nigerian universities with well-equipped technologies for SRL. Students should be encouraged through constant seminars and workshops to develop and integrate technologies for SRL to facilitate learning. Periodic workshops/seminars and conferences are recommended for all undergraduate students irrespective of their gender, level of study, and school proprietorship in order to broaden their horizon on the utilization of technologies for SRL that would facilitate the teaching and learning processes across universities in Nigeria.

Suggestions for Further Studies

For further researches in this area, the following were suggested: Exertions to replicate this study in tertiary institutions in other zones of Nigeria should be considered; Further studies could be replicated among special needs postgraduate students in Nigerian universities; Some other construct such as readiness, and motivation toward the adoption of technologies for SRL should also be researched; and The variation in the use of technologies for SRL by students based on

variables such as age could be investigated.

Suggestions for Further Studies

For further researches in this area, the following were suggested: Exertions to replicate this study in tertiary institutions in other zones of Nigeria should be considered; Further studies could be replicated among special needs postgraduate students in Nigerian universities; Some other construct such as effectiveness, and attitude toward the adoption of technologies for SRL should also be researched; and The variation in the use of technologies for SRL by students based on variables such as age could be investigated.

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