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PERCEIVED EFFECTIVENESS OF ONLINE LEARNING ON SELF-EFFICACY AND ACADEMIC SATISFACTION OF UNDERGRADUATE STUDENTS IN TERTIARY INSTITUTIONS IN ANAMBRA STATE

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ABSTRACT

The study investigated the perceived effectiveness of online learning on self- efficacy and academic satisfaction among undergraduate students in public universities in Anambra State. Three research questions guided the study. They study adopted descriptive survey research design. The population of the study comprised 89,178 undergraduate students in public universities in Anambra State. The sample size was 200 respondents selected through simple random sampling technique. Three instruments titled "Effectiveness of online learning on self-efficacy of students in tertiary institutions questionnaire (EOLSESTIQ), Effectiveness of online learning on academic satisfaction among students in tertiary institutions questionnaire (EOLASSTIQ) and the strategies for enhancing the effectiveness of online learning on self-efficacy and academic satisfaction among undergraduate students in tertiary institutions (SEOLSEASUSTI) were used for data collection. The instruments were developed by the researchers through the insight gained from

literature reviewed. The questionnaires are developed using four-point likert scale. They have total of 21 items. They were validated by three experts in the Faculty of Education, Nnamdi Azikiwe University, Awka. Cronbach's Alpha method was used to determine the internal consistency of the questionnaire and it yielded the reliability coefficient values of .78, 80 and .81 respectively. For the collection of the data, the researchers administered copies of questionnaire to the sampled students and the data was collected using direct delivery technique (DDT) which helped to ensure 100% collection of the instrument. The collected data was analyzed using arithmetic mean. The findings of the study showed that online learning is ineffective on self-efficacy among undergraduate students in tertiary institutions in Anambra state. Base on the findings, it was concluded that online learning is ineffective on self-efficacy and academic satisfaction of undergraduate students in tertiary institutions in Anambra State. Therefore, the study recommended among others that government and school administrators should providing constant power supply and adequate e-learning facilities to tertiary institutions in Nigeria. This would go a long way to ensure the effectiveness of online learning for enhanced self-efficacy and academic satisfaction among students in the tertiary institutions.

Keywords: Online learning, Self-efficacy, Academic Satisfaction, Undergraduate Students

Introduction

Technological advancements have ushered a pulsating paradigm shift in all dimensions of the daily activities of humans. Undergraduate students learning in tertiary institutions all over the world have undergone tremendous transformation, especially since the advent of information and communication technology (ICT). Observably, there is a shift from traditional approach of teacher directed to modern methods where computer technology plays a significant role. In this regard, ICT has promoted learning and made it more meaningful, where undergraduate students can stay even in their homes or classrooms and even receive lectures without seeing the lecturer. However, the aspect of ICT that brought about this revolution in undergraduate students' learning is called on-line learning or E-learning.

On-line learning is as electronic information communication technologies (ICTs) used in teaching-learning process in tertiary institutions. The term 'on-line learning' according to Abrami, Bernard, and Wade (2019) refers to the use of computer technology in education, whether face- to-face in the classrooms, in blended and hybrid courses or in mediated distance education contexts. In other words, on-line learning can be seen as the use of electronic information communication technologies (ICTs) in formal learning contexts (Greenall and Loizedes, 2018). Thus, in the present study, on-line learning is conceptualized as electronic information communication technologies (ICTs) used in teaching-learning process in tertiary institutions and other academic related courses.

Historically, on-line learning took its roots in the 1960s. In the 60s, Donald Bitzer worked as an assistant at the tertiary institutions of Illinois and developed a program for computer learning. It was used for

networking and turned into a basic platform for online learning according to (Richard and Haya 2019). Richard and Haya, stressed that on-line learning instruments and techniques rapidly developed in the 80s and 90s. They asserted that the first Macintosh in the 1980s brought PCs to many houses, letting people learn and acquire new skills. At the same time that in the 90s, on-line learning gained more popularity, and learning courses established themselves as a dominant means of providing access to knowledge.

According to Nwankwo (2020), the development of on-line learning in Nigeria could be traced back to the development of telecommunication which began in 1996 when e-cable connections was established by the colonial masters between Lagos and the colonial office in London to transmit information and receive feedback. Therefore, for the fact that the history described on-line learning as a system that goes with transmission information and receiving of feedback, the present researchers in the context of this study contextualized on-line learning as the use of electronic media such as the internet or computer to facilitate learning. Thus, On-line learning facilities are available from many sources. Examples of on-line learning facilities include: desktop computers, laptop computers, scanners, electronic overhead projectors, printers, photocopying machines, internet, phones, Microsoft Word, Microsoft excel, Microsoft PowerPoint, electricity supply, and alternative energy source (Wilson, 2022).

Further, on-line learning according to Galway (2017), Smith and Magee (2015), can transcend the limits of geography to provide access to quality education, regardless of a place of residence. Galway (2014) opined that the use of on-line learning seeks to overcome the challenges of traditional teleconferencing and print-based distance education, including (to name just a few) high costs, inflexibility, scheduling problems, and the inability to accommodate large numbers of students.

Consequently, on-line learning often involves both out-of-classroom and in-classroom educational experiences via technology applications and processes such as Web-based learning, computer-based learning, virtual education opportunities and digital collaboration. Content is delivered via the Internet, intranet/extranet, audio or video tape, satellite TV, and CD-ROM (Adeleye, 2021). It can be self- paced or instructor-led and includes media in the form of text, image, animation, streaming video and audio. Thus, on-line learning is broad that it covers classroom activities that use digital technology, as well as online learning outside classroom.

The on-line learning system can solve problems of access since work or lessons can be accessed from school or home (Keane, 2018). In this case, it means that the dependency of booking a computer room at a particular time is lessened, and students are both encouraged and challenged to use information technology within an educational context. A successful on-line learning experience can use a combination of the technologies most appropriate for the

practitioner, the learner group, the course content and course assessment.

Thus, on-line learning can be classified in different ways. It can be classified based on the extent of their engagement in education; it can also be classified based on the timing of interaction (Algahtani 2019). Algahtani further divided on-line learning into two basic types, consisting of computer-based and the internet based on-line learning. The computer-based learning comprises the use of a full range of hardware and software generally that are available for the use of information and communication technology (ICT) and also each component can be used in either of two ways: computer-managed instruction and computer-assisted-learning. In computer assisted-learning, to Algahtani (2019), computers are used instead of the traditional methods by providing interactive software as a support tool within the class or as a tool for self-learning outside the class. In the computer-managed-instruction, however, computers are employed for the purpose of storing and retrieving information to aid in the education of students in various diversities. Nwankwo (2019), posited that the school administrators support to teachers' instructional method and their modifications of instructional approaches, also provision of adequate online facilities will go a long way in promoting effective on-line learning and self-efficacy of the students.

Additionally, from the above information, there is every indication that students who adequately followed on-line learning could quality self-efficacy which made it easy to have proper access to technology and internet use for multiple purposes of advanced level. This correlate the assertion of Pajares (2019) who stated that self-efficacy level of an individual can be enhanced by asking them to use ICT in searching and using information, constructing knowledge, skills and experiences Likewise, Taipjutorius, Hansen and Brown (2017) opined that apart from measuring the effectiveness of students self-efficacy and online learning, there is need to analyze the level of students' satisfaction in online learning environments because of new trends and tools used as a communication medium between students and lecturers.

The term self-efficacy refers to an individual's confidence on his ability to complete a task or achieve a goal (Okafor, 2021). The concept of self-efficacy was originally developed by Albert Bandura. Today, psychologists contend that a person's sense of self-efficacy can determine whether he actually succeeded at a given task (Adebayo, 2021). Njoku, (2021), opined that self-efficacy refers to the set of beliefs people hold about their ability to complete a particular task. In the same vein, Albert Bandura in Ugwu (2019) conceptualized self-efficacy is the belief in one's ability to achieve goals, accomplish tasks, and succeed in various aspects of life.

In the content of this study, self-efficacy reflects an individual's momentary belief on his capability to perform a specific task at a specific level of performance. For example, if a person believes that the probability of selling $30,000 of product in one month is .90, one would judge his self-efficacy for that level of performance as being high. However, it entails the confidence in one's own

abilities, skills, and judgment to take on challenges, overcome obstacles, and attain desired outcomes.

Further, Charles (2021) assigned the same meaning as variables such as self-confidence, self-esteem, or optimism. Again, self-efficacy has a slightly different definition than any of these related constructs. The term self-efficacy refers to an individual's confidence in their ability to complete a task or achieve a goal. Okafor, (2021), also assert that self-efficacy entails an individual's confidence in their ability to complete a task, achieve a goal and satisfaction. Therefore, for the fact that online learning is something that can be done either while in the classroom, school environment and out of the school environment, it is expected that the users will find satisfaction using it because it permits freedom of choice of time and relaxation.

Satisfaction according to Bailey and Pearson, (2017) is described as a person's attitude or feelings about a situation that is influenced by a variety of factors. Student academic satisfaction is more specifically defined as students' perceptions of the educational value and experience received at a particular educational institution (Astin, 2021). Student satisfaction can be highly influenced by peer interaction, student-faculty interaction, and a sense of academic inspiration of both the student and the students' peers. Diekelmann (2019) revealed that studies of online courses at graduate and undergraduate level may have a significant effect on students' satisfaction. Research studies conducted on online courses by Vonderwell and Turner, 2020) have also identified certain issues including prompt and helpful communication with the instructor; clear guidelines with respect to course expectations; support regarding enrollment; student assignments and requirements; and, data security. These issues may raise students' satisfaction if addressed properly (Vonderwell and Turner, 2020).

Student academic satisfaction at the same time can be influenced by the availability of the access to the technology. In virtual environment, collaborative learning tools are crucial in improving students' satisfaction. According to Hara and Kling (2020), these tools help the students to work in groups and provide prompt feedback. Moreover, in online learning environment, students have the edge to share their viewpoints and have discussion with one another. This means that online learning allows the students to gain insight on a particular topic that would not have been possible otherwise. Cooperative or constructive learning model advocates that learner can establish conceptual knowledge and high-level thinking models by employing media presentations and interactive communication furnished by industrial techniques. Likewise, Robert Gauge (1965) in a theory stated that teaching will improve when instructional resources are adequately utilized.

Notably, the virtual features of online learning may help learners, motivating continuous online learning and formulating learning models effectiveness. These features according to Piccoli, (2021) include management of learning processes, online interactive brainstorming, and multimedia presentation for course contents.

Additionally, Piccoli (2021), asserted that quality is an important factor in learner satisfaction and online learning. Moreover, proper feedback techniques are considered to be significant in online learning environment. Study by Thurmond (2022) stressed that there could be a considerable influence of environmental variables such as perceived interaction with others and diversity in assessment on on-line learning. Different evaluation techniques are employed in an online learning system, which make the students believe that they are maintaining a regular connection with their instructors and their academic efforts are being assessed properly.

Thus, there seems to be controversial reports regarding the effectiveness of online learning on self-efficacy and academic satisfaction among undergraduate students in tertiary institutions. Meanwhile, Anang (2019), Mba (2021), among others argued that online learning has enhanced students' level of self-efficacy. On the contrary, Samuelson (2018), Odili, (2021), among others reported that majority of students in tertiary institutions who use online learning facilities were known for low levels of self-efficacy and they performed poorly academically. In terms of satisfaction, Wisdom (2022) agreed that many students are not satisfied with online learning environment but researches carried out by Adebayo (2021) and Wilson (2020) stated that students in tertiary institutions are not satisfied with online learning environment. Hence, it is based on the above information that the researchers intend to investigate on the effectiveness of online learning on self-efficacy and academic satisfaction among undergraduate students in tertiary institutions more particularly in Anambra state.

The researchers however believed that the outcome of this research work will be beneficial to many including the school administrators because it will offer them the solutions to several challenges which currently are facing the lecturers in tertiary institutions which possibly could be as a result of increasing pressure on the available learning resources and increasing number of students. It will as well as a quest to improve the quality of learning materials and help in creation of a learning approach that makes room for active approach to learning to improve students' self-efficacy and academic satisfaction in tertiary institutions. It is also believed that through this study, the management of tertiary institutions will be motivated to facilitate cooperative learning, encourage dialogue and create a more engaging classroom to enhance effective on-ling learning. This study could also encourage students in tertiary institutions to develop interest in the use of on-line learning which will obviously promote their awareness of the importance of the world around them. At the same time could enable the students to pave way for a new pedagogical approach of learning and improve their self-efficacy.

Statement of the Problem

The emergence of information and communication technology (ICT) has led to technological revolution World Wide and on-line learning appears to be the aspect of ICT that has brought about this revolution in

students' learning which includes the use of computer-based and the internet based on-line learning. The advances in on-line learning facilities tend to affect every aspect of human endeavour including education. This high technological global communication with various forms of electronic media seems to render obsolete the conventional method of teaching which is characterized by the use of chalkboard, charts, flannel boards and Holographs. However, there appears to be controversial reports on the effectiveness of online learning on self-efficacy and academic satisfaction among undergraduate students in tertiary institutions. Literature shows that online learning tends to enhanced students' level of self-efficacy. On the contrary, there appears to be some scholars who stressed that majority of students in tertiary institutions who use online learning facilities were known for low levels of self-efficacy and they performed poorly academically. More so, it seems that many students are not satisfied with online learning environment while there are students in tertiary institutions who are highly satisfied with online learning environment. It therefore become very difficult to identify if online learning is effective or not on self-efficacy and academic satisfaction among undergraduate students in tertiary institutions; hence, it is behind this argument that the present study sort to investigate the perceived effectiveness of online learning on self-efficacy and academic satisfaction among undergraduate students in tertiary institutions in Anambra state.

Purpose of the Study

The main purpose of this study is to ascertain the perceived effectiveness of online learning on self-efficacy and academic satisfaction among undergraduate students in tertiary institutions in Anambra State. Specifically, the study sought to determine the:

1. Perceived effectiveness of online learning on self-efficacy among undergraduate students in tertiary institutions in Anambra State.
2. Perceived effectiveness of online learning on academic satisfaction among undergraduate students in tertiary institutions in Anambra State.
3. Strategies for enhancing effective online learning, self-efficacy and academic satisfaction among undergraduate students in tertiary institutions in Anambra State.

The following research questions guided the study:

1. What is the effectiveness of online learning on self-efficacy among undergraduate students in tertiary institution in Anambra state?
2. What is the effectiveness of online learning on academic satisfaction among undergraduate students in tertiary institution in Anambra state?
3. What are the strategies for enhancing effective online learning on self-efficacy and academic satisfaction among undergraduate students in tertiary institution in Anambra State?

Conceptual clarification

On-line learning

The term 'on-line learning' broadly refers to the use of computer technologies in education, whether in face- to-face classrooms, in blended and hybrid courses, in mediated distance education contexts or in online learning environments (Abrami, Bernard, Wade 2019). On-line learning can be seen as the use of electronic information communication technologies (ICTs) in formal learning contexts (Greenall and Loizedes, 2018). According to Galway (2017); Smith and Magee (2015), on-line learning can transcend the limits of geography to provide access to quality education, regardless of a place of residence. Galway (2014) further said that the use of on-line learning is seen to overcome the challenges of traditional teleconferencing and print-based distance education, including (to name just a few) high costs, inflexibility, scheduling problems, and the inability to accommodate large numbers of students.

Consequently, on-line learning often involves both out-of-classroom and in-classroom educational experiences via technology applications and processes such as Web-based learning, computer-based learning, virtual education opportunities and digital collaboration. Content is delivered via the Internet, intranet/extranet, audio or video tape, satellite TV, and CD-ROM (Adeleye, 2021). It can be self- paced or instructor-led and includes media in the form of text, image, animation, streaming video and audio. Thus, on-line learning is broader than just online learning because it covers classroom activities that use digital technology, as well as online learning.

The system can solve problems of access as work can be accessed from school or home (Keane, 2018). This access means that the dependency of booking a computer room at a particular time is lessened, and students are both encouraged and challenged to use information technology within an educational context. A successful on-line learning experience will use a combination of the technologies most appropriate for the practitioner, the learner group, the course content and course assessment. Thus, in the present study, on-line learning is conceptualized as electronic information communication technologies (ICTs) used in teaching-learning process in tertiary institutions in Anambra State

Self-efficacy

Self-efficacy is not self-image, self-worth, or any other similar construct. Self-efficacy according to Charles (2021) is often assigned the same meaning as variables such as confidence, self-esteem, or optimism. However, it has a slightly different definition than any of these related constructs. The term self-efficacy refers to an individual's confidence in their ability to complete a task or achieve a goal (Okafor, 2021). The concept was originally developed by Albert Bandura. Today, psychologists contend that a person's sense of self-efficacy can influence whether he or she actually succeed at a task (Adebayo, 2021). Self-efficacy refers to the set of beliefs people hold about their ability to complete a particular task (Njoku, 2021). Self-efficacy reflects an individual's

momentary belief in his or her capability to perform a specific task at a specific level of performance. For example, if a person believes that the probability of selling $30,000 of product in one month is .90, one would judge his or her self-efficacy for that level of performance as being high.

Additionally, Albert Bandura in Ugwu (2019) According to Albert Bandura, self-efficacy is the belief in one's ability to achieve goals, accomplish tasks, and succeed in various aspects of life. It is the confidence in one's own abilities, skills, and judgment to take on challenges, overcome obstacles, and attain desired outcomes. Self-efficacy is not just a general feeling of confidence, but a specific belief in one's ability to perform specific tasks and achieve specific goals. Bandura defines self-efficacy as a dynamic and malleable construct, influenced by four primary sources: mastery experiences, vicarious experiences, social persuasion, and emotional and physiological states. Mastery experiences, such as achieving success in a particular task, can enhance self-efficacy. Vicarious experiences, such as observing others achieving success, can also increase self-efficacy. Social persuasion, such as receiving encouragement and support from others, can also contribute to self-efficacy. Finally, emotional and physiological states, such as feelings of anxiety or stress, can impact self-efficacy. In summary, Bandura's definition of self-efficacy emphasizes its role as a belief in one's ability to achieve goals and succeed in various aspects of life. It is a dynamic construct, influenced by various sources, and plays a crucial role in motivation, behavior, and overall well-being.

Self-efficacy is linked to academic performance and the ability to overcome phobias. Wilson, (2022) rightly put, self-efficacy refers to an individual's belief regarding what he or she can successfully achieve at a designated level on an academic task or attain a specific academic goal. Akhtar (2019) maintained that self-efficacy is the belief we have in a person's own abilities, specifically his ability to meet the challenges ahead of him and complete a task successfully. By way of syntheses, the researchers posit that self-efficacy refers to a person's overall belief in his or her ability to succeed at an assigned task. In the context of this research self-efficacy refers to undergraduate students overall believe in their ability to succeed academically.

Academic satisfaction

Student academic satisfaction is described as a person's attitude or feelings about a situation that is influenced by a variety of factors (Bailey and Pearson, 2017). Student satisfaction is more specifically defined as students' perceptions of the educational value and experience received at a particular educational institution (Astin, 2021). Academic satisfaction is a multifaceted concept that has been defined in various ways by different authors. According to Chen & Chang (2020), academic satisfaction refers to the extent to which students feel content, pleased, and fulfilled with their academic experiences and achievements" (Chen & Chang, 2020). In the words of Kuh (2018), academic satisfaction is defined as the degree to which students perceive their academic experiences as meeting their needs,

expectations, and goals. Academic satisfaction encompasses students' evaluations of their academic experiences, including their learning outcomes, teaching quality, and overall educational experience (Richardson, 2015). Academic satisfaction is a subjective evaluation of one's academic experiences, encompassing cognitive, affective, and behavioral aspect (Pintrich, 2019).

Furthermore, Fredericks (2019) posited that academic satisfaction refers to the degree to which students feel engaged, motivated, and committed to their academic pursuits. Academic satisfaction is defined as the extent to which students perceive their academic experiences as valuable, meaningful, and relevant to their lives" (Bryson, 2019). Academic satisfaction encompasses students' perceptions of their academic progress, achievement, and personal growth (Zhang, 2019). Academic satisfaction is a multidimensional construct, encompassing students' evaluations of their academic experiences, learning outcomes, and overall educational quality (Liu, 2019). More so, Wanger (2021), academic satisfaction refers to the degree to which students feel supported, encouraged, and challenged in their academic pursuits. To the researcher, academic satisfaction is defined as the extent to which students perceive their academic experiences as aligning with their values, interests, and career goals. Academic satisfaction encompasses students' evaluations of their academic experiences, including their sense of belonging, engagement, and motivation.

Undergraduates

Undergraduates are students who are typically those working to earn bachelor's degree (or, less commonly, an associate's degree). These degrees are often referred to with the general term graduate degree. According to Igbo (2021), an undergraduate is a college or university student who has not graduated. After high school, one can become an undergraduate. Undergraduates are students of universities and colleges; they have graduated from high school and have been accepted to college, but they have not graduated (Wall, 2018). Ozulu (2017), posited that an undergraduate student is a student who is pursuing a degree at the first level of higher education (meaning the level after high school) at a college or university.

Similarly, an undergraduate in the according to Nnatu (2017) is a student at a university or college who is studying for his or her first degree. It is a student at college or university, who is working for their first degree (Kufu, 2020). Undergraduate therefore refers to a student at a college or university who has not received a first and especially a bachelor's degree (Nwankwo, 2020). Furthermore, an undergraduate degree is sometimes called a first degree. Undergraduate is a college student pursuing a non-advanced degree, most commonly a bachelor's degree (Mba, 2018).

Undergraduates are a dynamic and diverse group, and current authors have identified several key features that characterize this population. According to Hurtado (2012), undergraduates bring a wide range of backgrounds, experiences, and perspectives

to campus, making diversity a hallmark of this group. As they navigate their academic journey, undergraduates are developing their sense of identity and self-awareness, as noted by Chickering (2019). This process is marked by exploration, experimentation, and discovery, as students grapple with complex questions about their values, beliefs, and goals. Academically, undergraduates are building their cognitive and critical thinking skills, as described by Perry (2020). They are learning to navigate complex ideas, evaluate evidence, and develop well-supported arguments. Socially, undergraduates are forming connections and building relationships with peers and mentors, as highlighted by Tinto (2018). These relationships play a critical role in shaping their college experience and influencing their academic success. Emotionally, undergraduates may face challenges and struggles, including anxiety and stress, as noted by Lazarus (2018). However, they are also developing resilience and learning to cope with adversity. In terms of career development, undergraduates are exploring their interests and passions, as described by Holland (2017). They are beginning to envision their future selves and chart a path towards their goals. Overall, undergraduates are a vibrant and dynamic group, characterized by diversity, growth, exploration, and transformation. Thus, undergraduate is used in the context of colleges and university programmes where students are pursuing a degree (generally referred to as an undergraduate degree) that is not an advanced degree. In this study, undergraduates are regular students in tertiary institutions.

Literature review

The literature anchored on Instructional Theory by Robert Gauge, 1965. The theory states that teaching will improve when instructional resources are adequately utilized. Instructional theory is a theory that offers explicit guidance on how to better people learn and develop". Instructional theories focus on how to structure material for promoting the education of human beings, particularly undergraduates. The theory is influenced by three basic theories in educational thought such as behaviourism, cognitive and constructivism. Instructional theory is a theory that offers explicit guidance on how to better the way people learn and develop". It states that people learn better when the needed resources are provided and effectively used by instructors.

According to instructional theory, undergraduates' self- efficacy and academic satisfaction can be encouraged by ensuring that on-line facilities needed are available and used during teaching-learning process. Simply put, if educators can utilize adequate on-line learning for academic purpose, undergraduates' self-efficacy and academic satisfaction will improve because teaching and learning process will be positively influenced.

Empirical Studies

Ononuju (2024) examined the perceived influence of on-line learning on academic satisfaction among students of Nnamdi Azikiwe University, Awka. Three research questions guided the study. The study adopted descriptive survey research design.

The population of the study was 7,012, comprising all the Undergraduate regular students of Nnamdi Azikiwe University Awka. The sample size was 200 respondents selected through simple random sampling techniques. A self-designed structured questionnaire was the instrument used for data collection and was validated by two experts in the Faculty of Education, all from Nnamdi Azikiwe University, Awka. The reliability of the instrument was tested using Cronbach Alpha which yielded the coefficient of 0.81. Data for the study were collected and analyzed using mean rating. A four-point Likert scale with a mean benchmark of 2.50, was also adopted for decision-making. The findings of the study showed that internet-based learning and computer based-learning enhances academic satisfaction of students of Nnamdi Azikiwe University, Awka. This led to the conclusion that on-line learning improves academic satisfaction of students Nnamdi Azikiwe University, Awka.

Mohamed and Mohamed (2022) investigate the relationship between On-line learning and student satisfaction with mediating Role of academic performance in private schools in Egypt. The objectives of This research are to determine how On-line learning affect student's satisfaction, to identify how On-line learning, affect academic performance, to examine how academic performance affect student's satisfaction, to investigate the mediation role of academic performance between On-line learning and student's satisfaction and to develop a framework for the relationship between On-line learning and student's satisfaction in Egyptian private schools using structural equation modeling. The methodology will be based on quantitative analysis by using a questionnaire tool to gather required data and structural equation model analyses (SEM) using AMOS software version 25. The main conclusions drawn from this study are the direct effect between On-line learning and Students Satisfaction is statistically significant, the direct effect between On-line learning and Academic Performance is statistically significant, the direct effect between Academic Performance and Students Satisfaction is statistically significant, Finally, the study found that the Academic Performance mediates the relationship between On-line learning and Students Satisfaction.

Sahela (2021) investigated the level of students' self-efficacy, specifically the use of Information Communication Technologies and performing academic tasks for online courses. A quantitative descriptive survey was conducted to explore the problem. The participants were selected from two departments (Arts and Computer Science) of a university. All the students from the Department of Arts were included in study sample and non-proportional random sampling technique was used for selecting participants from the department of CS. In this way, self-tailored five-point Likert Scale was distributed to 603 sampled participants. The study concluded that e-learners' had moderate level of self-efficacy to perform academic tasks and their level of self-efficacy to use ICT was at higher level. There was highly significant positive relationship between academic self-efficacy and self-efficacy to use ICT. The study found that the

self-efficacy for IT use is a good predictor of academic self-efficacy. A course on ICT use may be offered to all the e-learners as a pre-requisite for any online course. It may enhance the academic self-efficacy of e-learners.

Ogunyemi (2021) investigated the perceived effectiveness of online learning on self-efficacy among undergraduates in Lagos state university. A quantitative research design was employed, and data were collected from 600 undergraduate students in three public universities in the South East region using a self-efficacy questionnaire and an online learning effectiveness survey. Descriptive statistics, exploratory factor analysis, and multiple regression analysis were used to analyze the data. The results show that online learning has a significant positive impact on self-efficacy ($R = 0.45$, $p < 0.01$), with students reporting improved confidence in their ability to learn and achieve academic success. The study also found that online learning fosters autonomy, motivation, and active learning, which are essential for self-efficacy development. The findings suggest that online learning can be an effective tool for enhancing self-efficacy among undergraduates in Lagos state university.

Nwankwo and Mmadu (2022) assessed the perceived effectiveness of online learning on self-efficacy among undergraduates in South East Nigerian public universities using a mixed-methods approach. Three research questions guided the study. A survey research design was employed, and data were collected from 500 undergraduate students using a self-efficacy questionnaire and an online learning effectiveness survey. Semi-structured interviews were also conducted with 30 students to gather qualitative data. Descriptive statistics, inferential statistics (t-test, ANOVA), and thematic analysis were used to analyze the data. The results show that online learning significantly enhances self-efficacy ($t = 2.50$, $p < 0.05$), with students reporting improved confidence in their academic abilities and a greater sense of control over their learning. The qualitative data revealed themes of autonomy, motivation, and active learning, which are critical for self-efficacy development. The findings suggest that online learning can be a valuable tool for promoting self-efficacy among undergraduates in South East Nigerian public universities.

Gap in the Literature

The empirical review revealed that many researchers have carried out studies on on-line learning and self-efficacy of students as well as studies on online-learning and academic satisfaction but none have merged the three variables. This shows that no study has been carried out on the effectiveness of online learning on self-efficacy and academic satisfaction among undergraduate students in tertiary institutions. Likewise, the reviewed studies showed that some of these related studied have been carried out in some universities like Nnamdi Azikiwe University, Awka but none has covered tertiary institutions in Anambra, State. This gap is what the study covered.

Methods

The researchers adopted descriptive survey research design. According to Nnabugwu

(2010), descriptive survey research design is a situation whereby a group of people or items are considered to be true representation of the entire population. This design is considered appropriate for the present study because it aimed at eliciting responses from group of people on perceived effectiveness of online learning on self-efficacy and academic satisfaction among undergraduate students in tertiary institutions.

The study was conducted in Anambra State. A state located at the southern part of Nigeria and has its' capital is Awka and has boundary with Delta State, Imo State and River State the East and Kogi State the North. The indigenous ethnic group in Anambra state is the Igbos (98% of the population) and a small population of Igala (2% of the population) who live in the North Western part of the State (Oliver, 2008). Anambra people are mostly known for industrial production, distributive business, civil service and farming. Hence, People in this area are predominantly agrarian, but major inroads have been made in commerce and education. Population density in Anambra state is among the highest in Nigeria (Nwafor and Nwoye (2013). There are Federal, State and Private Universities in Anambra State. 6.2209^0 is the longitude while 6.9370^0E is the latitude of Anambra State. Imperatively, public tertiary institutions located in Anambra State were chosen for this study because studies of this nature seem not to have been carried out there.

The population of the study comprised 89,178 undergraduate students in Nnamdi Azikiwe University, Awka, Chukwuemeka Odumegwu Ojukwu University, Igbariam, Federal Polytechnic Oko, Anambra State Polytechnic, Mgbakwu, Federal college of education, Umunze and Nwafor Orizu college of Education, Umunze. The population was obtained from Academic Planning Units of the above-mentioned tertiary institutions 2024.

The total number 300 undergraduate students were sampled through simple random sampling technique. Two faculties were sampled in each of the tertiary institutions using simple random sampling technique, in each of faculty; two departments were sampled using simple random sampling. In each of the departments 25 students were sampled using simple random sampling technique employing balloting which summed to 300 undergraduate students

Three instruments titled "Effectiveness of online learning on self-efficacy of students in tertiary institutions questionnaire (EOLSESTIQ), Effectiveness of online learning on academic satisfaction among students in tertiary institutions questionnaire (EOLASSTIQ) and the strategies for enhancing the effectiveness of online learning on self-efficacy and academic satisfaction among undergraduate students in tertiary institution (SEOLSEASUSTI) were used for data collection. The instruments were developed by the researchers through the insight gained from literature reviewed. The questionnaires are developed using four-point likert scale. they have total of 21 items. They were validated by three experts in the Faculty of Education, Nnamdi Azikiwe University, Awka. Cronbach Alpha method was used to determine the internal

consistency of the questionnaire and it yielded the reliability coefficient values of .78, 80 and .81 respectively. For the collection of the data, the researchers administered copies of questionnaire to the sampled students and the data was collected using direct delivery technique (DDT) which helped to ensure 100% collection of the instrument. The collected data was analyzed using arithmetic mean.

Data Presentation and Analysis

The presentation was sequentially done starting with the answers to the research questions.

Analysis of Research Questions

Research Question 1: What is the effectiveness of online learning on self-efficacy among undergraduate students in tertiary institution in Anambra state?

Table 1: Respondents' mean ratings on the effectiveness of online learning on self-efficacy among undergraduate students in tertiary institution in Anambra state (N = 300)

S/N	Items	SA	A	D	SD	Total	$\bar{X}$	Remarks
1	Online learning promotes autonomy and self-directed learning among students	20 80	18 54	165 330	97 97	300 561	1.87	Not Effective
2	Online learning provides opportunities for students to take ownership of their learning	32 128	35 105	127 254	106 106	300 593	1.98	Not Effective
3	Online learning encourages students to reflect on their learning and set goals	121 484	95 285	44 88	40 40	300 897	2.99	Effective
4	Online learning builds confidence through successful online interactions and feedback	19 57	66 198	154 308	61 61	300 624	2.08	Not Effective
5	Online learning provides self-directed technical support for students	86 344	93 279	63 126	58 58	300 807	2.69	Effective
6	Online learning connects students with peers and instructors which builds their confidence for academic excellence	102 408	81 243	36 108	81 81	300 840	2.80	Effective
	Cluster Mean						**2.40**	**Not Effective**

Data presented in Table 1 reveals that items 3, 5, and 6 with mean scores 2.99, 2.69, and 2.80 were rated effective by the respondents while items 1, 2, and 4 with mean scores 1.87, 1.98, and 2.08 were rated ineffective by respondents because the mean scores were below the 2.50 threshold. The cluster mean of 2.40 summarized that online learning for self-efficacy is ineffective among undergraduate students in tertiary institution in Anambra state.

Research Question 2: What is the effectiveness of online learning on academic satisfaction among undergraduate students in tertiary institution in Anambra state?

Table 2: Respondents' mean ratings of the effectiveness of online learning on academic satisfaction among undergraduate students in tertiary institution in Anambra state (N = 300)

S/N	Items	SA	A	D	SD	Total	$\bar{X}$	Remarks
7	Students learn at their own pace anytime, and from anywhere with an internet connection	46 184	82 246	100 200	72 72	300 702	2.34	Not Effective
8	Online-learning provides access to high quality educational resources, which may not be available otherwise	31 124	19 114	186 372	64 64	300 674	2.25	Not Effective
9	Online learning offers a diverse range of courses and programmes	48 192	99 297	91 182	62 62	300 733	2.44	Not Effective
10	It link students with each other	51 204	66 198	98 196	85 85	300 683	2.28	Not Effective
11	It helps to develop independent learning for research	63 252	70 210	84 168	83 83	300 713	2.38	Not Effective
12	It is used for sourcing of information	32 128	35 105	127 254	106 106	300 593	1.98	Not Effective
13	It helps learners with immediate feedback about misspelled words	71 284	104 312	89 178	36 36	300 810	2.70	Effective
	Cluster Mean						**2.34**	**Not effective**

Data presented in Table 2 reveals that item 14 with mean score 2.70 was rated effective by the respondents because the mean score was above 2.50 threshold while items 7 – 12 with their respective mean scores of 2.34, 2.25, 2.44, 2.28, 2.38 and 1.98 were rated not effective by the respondents because the mean scores were below 2.50 threshold. The cluster mean of 2.34 summarized that online learning for academic satisfaction is not effective among undergraduate students in tertiary institution in Anambra state.

Research Question 3

What are the strategies for enhancing the effectiveness of online learning on self-efficacy and academic satisfaction among undergraduate students in tertiary institution in Anambra State?

Table 3: Respondents' ratings of respondents on strategies for enhancing the effectiveness of online learning on self-efficacy and academic satisfaction among undergraduate students in tertiary institution in Anambra State (N = 300)

S/N	Items	SA	A	D	SD	Total	$\bar{X}$	Remarks
14	By providing adequate e-learning facilities	96 384	107 321	56 112	41 41	300 858	2.86	Agree
15	Government providing constant power supply to the school	89 356	129 387	43 86	39 39	300 868	2.89	Agree
16	School management ensuring unlimited social network interaction between the lecturers and students	103 412	132 396	36 72	29 29	300 909	3.03	Agree

17	Government providing affordable specialized e-learning resources	71 284	104 312	89 178	36 36	300 810	2.70	Agree
18	Enforcing the use of e-learning facilities in teaching-learning process	99 396	107 321	65 139	29 29	300 885	2.95	Agree
19	Government and school administrators offering students scholarships to enable them acquire knowledge and skill for using e-learning technologies.	121 484	95 285	44 88	40 40	300 897	2.99	Agree
20	School administrators should promote the use of e-learning technologies as an aide to effective teaching and learning	82 328	100 300	68 136	50 50	300 814	2.71	Agree
	Cluster Mean						**2.87**	**Agree**

Data presented in Table 3 reveals that all the items were rated agreed by the respondents because it is above 2.50 threshold. The cluster mean of 2.87 shows that all the items in Table 3 are the strategies for enhancing the effectiveness of online learning on self-efficacy and academic satisfaction among undergraduate students in tertiary institution in Anambra State.

Summary of Findings

Based on the data analysed, it was deduced that:

1. Online learning for self-efficacy is ineffective among undergraduate students in tertiary institution in Anambra State.
2. Online learning for academic satisfaction is not effective among undergraduate students in tertiary institution in Anambra State.
3. Government providing adequate e-learning facilities, constant power supply to the school, school management ensuring unlimited social network interaction between the lecturers and students, government providing affordable specialized e-learning resources and enforcing the use of e-learning facilities in teaching-learning process among others are the strategies for enhancing the effectiveness of online learning on self-efficacy and academic satisfaction among undergraduate students in tertiary institution in Anambra State.

Discussion Of the Results

The results of this study were discussed based on the following sub-headings:

The effectiveness of online learning on self-efficacy among undergraduate students in tertiary institution in Anambra state

The findings of the study showed that online learning for self-efficacy is ineffective among undergraduate students in tertiary institution in Anambra State. This finding disagreed with the findings by Ogunyemi (2021) who found that online learning fosters autonomy, motivation, and active learning, which are essential for self-efficacy development and suggested that online learning can be an effective tool for enhancing self-efficacy among undergraduates in Nigerian public universities. This result is also in consonance with the findings by Wilson (2021), who supported that public universities are not

effective as regards online teaching and learning to promote academic self-efficacy of students.

The effectiveness of online learning on academic satisfaction among undergraduate students in tertiary institution in Anambra state

The findings of the study revealed that online learning for academic satisfaction is not effective among undergraduate students in tertiary institution in Anambra state. In this vein, Nnatu (2022) agreed that the effectiveness of online teaching and learning to enhance students' academic satisfaction is below expectation. The findings of the study contradict the findings by Ononuju (2024) which showed that internet based learning and computer based-learning enhances academic satisfaction of students.

Strategies for enhancing the effectiveness of online learning on self-efficacy and academic satisfaction among undergraduate students in tertiary institution in Anambra State

Government providing adequate e-learning facilities, constant power supply to the school, school management ensuring unlimited social network interaction between the lecturers and students, government providing affordable specialized e-learning resources and enforcing the use of e-learning facilities in teaching-learning process among others are the strategies for enhancing the effectiveness of online learning on self-efficacy and academic satisfaction among undergraduate students in tertiary institution in Anambra State. To support these findings, Nwankwo and Mmadu (2022) agreed that there is need for government to fund public universities adequately so that they can provided all the needed e-learning to promote online teaching and learning. In the finding of Nwankwo and Mmadu (2022), it was also revealed that online learning can be a valuable tool for promoting self-efficacy among undergraduates if necessary facilities are provided. The study succinctly agreed also with the findings of Wilson (2021), who said that when school management ensure unlimited social network interaction between the lecturers and students, online teaching and learning will be very effective and students self-efficacy and academic satisfaction will be improve.

Conclusion

From the analyses of the results of this study, it was concluded that online learning for self-efficacy and academic satisfaction is ineffective among undergraduate students in tertiary institutions in Anambra State therefore, government and school administrator should make an affordable effort to promote online learning within the university system. It was also concluded that university administrators should build a constant and uninterrupted network that will help to promote online learning and as well encourage students to improve on their self-efficacy and satisfaction towards their academics.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Government / school administrators should provide constant power supply and adequate e-learning facilities to public universities in Nigeria. This

would go a long way to ensure the effectiveness of online learning which could enhance academic self-efficacy and satisfaction among tertiary institutions students.

2. Government should provide affordable specialized e-learning resources and also enforce the use of e-learning facilities in teaching-learning process in public universities
3. School administrators should promote the use of e-learning technologies as an aide to effective teaching and learning.

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