

INFUSION OF ONLINE LEARNING: INTEGRATED SCIENCE STUDENTS' PERCEPTION ON ITS APPLICATION FOR MOTIVATION AND LEARNING PROCESS IN COLLEGE OF EDUCATION, IKERE-EKITI, NIGERIA.

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ABSTRACT

Onl ine learning requires a reconstruction of the roles, responsibilities, and practices of online instructors and their online students, which has become a reality that transcends the educational environment. So the objective of this study is to investigate the strength of the relationship between online-learning and students' motivation and learning process among students participating in the research. This study investigated the perception of Integrated Science students on online-learning process in College of Education, Ikere-Ekiti, Nigeria using NCE 1-3 in the department. The study comprises students from NCE 1-3 in the department of Integrated science. A random sampling technique was used to select 70 students from each level of study, making a total of 210 students. Four research questions were raised to guide the study and the data collected was analyzed using descriptive statistics. The study revealed that

Introduction:

Distance learning has evolved over the last three centuries into what is currently referred to as "online learning", via key delivery systems that reflect the tools available at the time: the postal system; radio and television; and interactive technologies (Anderson & Dron, [2011](#)). The year 1998 marked the beginning of a rise in online programs, when New York University unveiled NYU Online, which along with many of the other online programs that followed but did not survive. This initial failure of online programs to meet expectations also led to the

online-learning has motivated students learning. The study further revealed that online learning facilitates effective teaching and learning process in the institution and the level of exposure of students to online learning is minimal due to inadequate online learning tools. Based on the findings, it was recommended that adequate online facilities and device should be provided for students. It was also recommended that online learning should be infused and promoted in higher institutions and students should be orientated and retrained on the use of online learning technique. Lecturers should also be encouraged to regularly utilize online platforms for teaching, rating and assessment among others for effective motivation and learning.

Keywords: *Online-Learning, Infusion, Motivation, Perception*

Concept of “blended” or “hybrid” programs that surfaced in 1999/2000 and combined face-to-face classes with online classes hoping to synergize the advantages of both. Online and blended programs incorporate available technologies in offering asynchronous and synchronous/real-time delivery options and tools such as online discussion boards, chat rooms, and video conferencing (Kentnor, 2015). Online-learning is used nowadays as another option to face to face education. As a matter of fact, its use increases in a direct proportion with the increase of the number of students. This has made educators exert a lot of effort to help the learners to get interactive content that is full of multimedia as it has been proven that it has a significant effect on the process of learning. The impact of blogs and wikis has also been investigated on learners' collaboration and reflection and it was reported that they both have a positive effect. Online-learning has been introduced as a tool in the learning process in the majority of the international universities worldwide. The ubiquity of information technology has been influencing almost all aspects of our lives: the way we work, interact with others, process data into information, analyze and share information, entertain ourselves, and enjoy tourism. E-evolution or e-revolution has witnessed e-mails, e-commerce, e-government, and now e-education. E-

education or online education is changing the way we approach teaching and learning. Changes in education delivery models have been rapid and transformational. As institutions worldwide adapt to these changes, a very dynamic education landscape has generated immense interest among researchers, educators, administrators, policymakers and publishers (Palvia, [2013](#)).

The term “online-learning” is defined by Fee (2009) as “any learning that involves using internet or intranet.” A year later Cheng (2006) made the definition more generalized by indicating that it is “anything delivered, enabled, or mediated by electronic technology for explicit purpose of learning”. Although the online-learning term and tools do exist for over a decade, the educational research field has not given enough attention to the study of student motivation under the effect of online-learning. Online-learning has grown in significance as an educational tool just like technology has developed and progressed over the years. Interestingly, there have been more efforts at advancing technology than on attempting to understand the needs and learning styles of individual learners and instructional design. Online learning is now facilitating a more flexible learning approach, hence learning is made more readily available to the students especially in tertiary institutions (Fitzpatrick, 2012). The increased use of online-learning among educational institutions has led to a change in higher education. According to findings, there has been a rise of about 12-14 percent annually in enrolment for online learning over a five year period: 2004-2009 after secondary education and higher institutions which utilizes effective online learning methods do not only enhance their students performance but also motivate their zeal for learning, thereby prepare them practically to work in the information age (Connell, 2014). One of the main reasons for this is it gives students' greater access to education in comparison to traditional methods of teaching as students can undertake their study from anywhere and at any time as well as being given the option to study part-time or full-time.

Online-learning has transformed the educational sector by enabling students to share information and data in a relatively easier way. Recent

studies indicate that university students who have been enrolled on online-learning courses outperform those being taught on traditional courses. An example of this can be found at Carnegie Mellon University (CMU) in America where student exam results have shown improvement as a result of e-learning techniques (Nehme, 2010). It is therefore imperative that an education system is created which is capable of rapid adaption to its technological, social, cultural and political environment. Incorporating technology in the learning process does not necessarily guarantee motivated students. In fact, online instruction has resulted in the student-teacher relationship becoming less personal. Teachers are required to turn the classroom into an online environment. The question is what exactly is required of teachers to motivate students in an online environment? (Picar, 2011). It is essential for teachers to understand their students' motivations and educators must be actively involved in the stages of online learning course development for motivational purposes and improved performance. Although students take online courses with the intention of successfully completing them, they tend to fail for a number of reasons. The success or failure of online instruction is perhaps related to student motivation. To stimulate students, teachers should :

1. keep in mind that motivation must be natured in students.
2. explain to their students how the online environment may be used.
3. encourage interaction and collaboration among their students.
4. build study groups so that students will no longer be studying in isolation.
5. help students to make friends by meeting fellow students in the online environment (Picar,2011).

In view of Chang, (2010) who opined that active interaction in online learning activities including the types of interaction: the learner -self, learner- learner, learner - instructor, learner -content and learner interface. The learning activities in the course are a combination of forms of interaction between the subjects involved in the teaching and learning activities include: student-content, student-instructor, and student-student interaction. Popular LMS systems currently provide essential tools that allow interactive activities in the course, such as forums, message, online forms of assignments, exercises in wiki format, virtual classroom,

etc. These tools also assist teachers in tracking and monitoring the student learning process, such as status submitted assignments reports, the frequency of access statistics, activity logs on the system. There have been many studies that propose solutions to make interactive activities effectively support the learning process of students. The results of their study showed that students have better results and need less time learning when interacting more with the system. However, Nehme, (2012) reviewed the impact of the interaction on learning outcomes, with interactive activities including reading the contents of the blog, interacting with other learners, and engaging in the blog context with 342 students participated in the experiment. The results showed that this form of interaction between the students together have significant impact on student learning and motivation. He also showed that the number of posts increases in the time students has to submit assignments or take exams, students have better academic results using more time online during the course.

According to Greenland and Moree (2014), science has connected to innovation and brought about viable technologies and a beneficial manufacture, leading to a sustainable development in the modern world. It can be conveniently said that science, technology, innovation and manufacture are the pillars of a sustainable development in an industrialized world and plays major roles in the world economy. In an online environment, the role of the teacher changes from “the sage on the stage” to “guide on the side”. Such new roles for online instructors require training and support. However, in comparing participants’ satisfaction with face-to-face courses and online courses reported that generally participants reported higher satisfaction with face-to-face courses. He reported further that characteristics, such as gender, age and computer skills could influence students’ satisfaction with online courses. On the other hand, there are studies that reported otherwise and reported that interpersonal interactions and positive feedbacks by instructors impacted positively on participants’ satisfaction with online courses and believed that feedbacks with affective components supported students’ motivation

which in turn resulted in higher satisfaction. However, investigations on the relationships between participants' learning styles, satisfactions and perceptions towards online education and participants tend to perceive flexibility in course structure as strength of online courses, and they found their learning experiences in these courses to be motivated. In fact, they stated that positive attitudes towards learning, self-discipline and high self-motivations were the basis for their success in online courses. Participants of online courses tend to view online learning environment as enabling them to study at their own pace, be actively involved in the learning activities, improve their intrinsic motivation to learn and practice self-study compared to those attending traditional face-to-face classes.

What leads to successful online teaching and learning? What are the experiences of students and instructors in this type of an environment? How do students learn? How do we prepare students for successful online learning? These are among the questions being discussed. It is essential to understand the dynamics of the online learning environments, the perceptions and pre-conceptions that exist, and how best to utilize the potential of the technology to overcome barriers to successful learning. Students need to be prepared for changing demands related to online learning with respect to technology, learning management, pedagogical practice and social roles. There is a need for much more research on the pedagogy of online teaching and the utilization of tools afforded by the online environment to provide dynamic and active learning environments for students (Jung, 2011). He also found in his literature analysis of web-based instruction that learners have autonomy in making decisions regarding their own learning. He states "learners engaged in Web-based instruction use certain cognitive strategies or knowledge to exercise their learning autonomy which maximizes learning and the construction of new knowledge. Jung's (2011) analysis of fifty-eight articles showed that online learning requires that learners be collaborative as well as autonomous. He notes, "Both learner collaboration and learner autonomy seem to have emerged in web-based learning environments. Of course, web-based instruction can differ in the degree to which it accommodates these two elements.

Successful online learners need to be self-regulated or in the process of learning how to become self-regulated learners. Self-regulated learners use opportunities to make decisions about several aspects of their own

learning. They make decisions in the goal setting, planning, monitoring and assessment phases of the learning process. Self regulated learners know how to learn, how they learn, how to reflect on their learning, how to initiate learning and how to use time management skills efficiently. Interaction among students and between students and instructors is critical to support effective learning and collaboration. Furthermore, the intrinsic motivation to learn is fostered when interactions occur between learners. Instructors need to model for their students how to communicate effectively and properly using asynchronous and synchronous communication tools. This is important specifically because of the lack of physical presence and lack of body language in online environments. Proper behavior and an understanding of netiquette are essential skills for effective communication and although students are entering online environments with increasingly sophisticated skills and novices will learn through trial and error, having the instructor set the standard is a more effective strategy. In view of Marcela, (2011), learners need to be aware of what, when and how to ask questions. Learner success in online environments can be improved when students are able to use the tools afforded by the environment. In combination with critical thinking, these tools can assist the learner in filtering through the tremendous amount of information they will encounter when searching online resources to obtain useful knowledge. Online instructors need to understand the importance of building a supportive online learning community. Instructors could also provide an orientation for the learners and access to the online course. Clear expectations, guidelines and code of conduct as well as special needs of learners is essential to be discussed and addressed. Observations have shown that adequacy of these facilities varies in most higher institutions coupled with students' perception towards its effective use. This study therefore examined the students' perception on the use of online in teaching and motivating Integrated Science Students in College of Education, Ikere-Ekiti.

Research Questions

The following research questions were raised for the study:

- i. What is the level of students' exposure on the use of online techniques?
- ii. What are the students' perceptions on the effects of online on teaching and learning process?

- iii. Does online learning motivates students towards learning?
- iv. How adequate are ICT and other devices provided to the schools as perceived by students?

Research Methodology

The Population of this study consists of all Integrated Science Students in College of Education, Ikere-Ekiti, Nigeria in 2018/19 academic session. Simple random sampling technique was adopted in the selection of 210 students in the three levels of study in the department of Integrated science of the chosen institution. Descriptive statistics of survey type was used to collect data for the study. A self designed instrument titled "Students Perception on Online-Learning (SPOL)" was used to collect data. The instrument was validated by experts in Science Education and Computer Science. The reliability of SPOL was done using the test re-test method within the interval of two weeks. Reliability coefficient of 7.8 was obtained, which was found suitable. The data collected was analyzed using frequency counts and percentage scores.

Results

1. **Research Question one:** What is the level of students' exposure on the use of online techniques?

Table 1: Level of students' exposure to online techniques

NCE LEVEL	High	Moderate	Low
NCE ONE	16	10	44
NCE TWO	18	15	37
NCE THREE	14	20	36
TOTAL	48	45	117
Percentage (%)	22.9	21.4	55.7

As shown in table 1, about 56% of the students agreed that the level of training and exposure given to them on the use of online technique is quite low.

2. **Research Question Two:** What are the students' perceptions on the effects of online on teaching and learning process?

Table 2: Students' perceptions on the effects of online on teaching and learning process

NCE LEVEL	A	D	ND
NCE ONE	62	5	3
NCE TWO	59	6	5
NCE THREE	64	3	3
TOTAL	185	14	11
Percentage (%)	88.1	6.7	5.2

As shown in table 2, 88% of the students agreed that online-learning enhances effective teaching and learning process in the department of Integrated Science, College of Education, Ikere-Ekiti.

3. Research Question Three: Does online learning motivates students towards learning?

Table 3: Online learning as a motivator of Integrated Science students towards learning

NCE LEVEL	A	D	ND
NCE ONE	64	4	2
NCE TWO	61	6	3
NCE THREE	59	6	5
TOTAL	184	16	10
Percentage (%)	87.6	7.6	4.8

As shown in table 3, most(about 88%) of the students agreed that online-learning is a motivator of learning process in the department of Integrated Science, College of Education, Ikere-Ekiti.

4. Research Question Four: How adequate are ICT and other devices provided to the schools as perceived by students?

Table 4: Adequacy of ICT and other devices

NCE LEVEL	Adequate	Not Adequate
NCE ONE	31	39
NCE TWO	25	45
NCE THREE	24	46
TOTAL	80	130
Percentage (%)	38.1	61.9

As shown in table 4, about 70%) of the students admitted that ICT and technological devices that enhance online-learning provided to the department of Integrated Science, College of Education, Ikere-Ekiti are not adequate.

Discussion

Based on the findings of the study, it is clear that online-learning facilitates teaching and learning process. For instance 88% of the students agreed that online-learning enhances effective teaching and learning process. This is in agreement with Fitzpatrick, (2012) views. He opined that online learning is now facilitating a more flexible learning approach; hence learning is made more readily available to the students especially in tertiary institutions. In the same vein, this could be an indication that students exposed to online learning process are more motivated and perform better. Perhaps that is an explanation for what Connell, (2014) noted in his study, that higher institutions which utilize effective online learning methods do not only enhance their students' performance but also motivate their zeal for learning, thereby prepare them practically to work in the information age.

The study further revealed that the level of training and exposure given to students on the use of online-learning technique is quite inadequate. Picar, (2011) in a study stated that educators must be actively involved in the stages of online learning course development for motivational purposes and improved performance. Findings from the result also revealed that the technological and ICT facilities available in the institution of study are not enough. This implies that tertiary institutions authorities should make facilities available to student for improved performance.

Conclusion

It could be concluded that the level of training and exposure given to the Integrated Science Students in the institution of study on the use of online technique is quite low and ICT devices that enhance online-learning provided are not adequate. Although, majority of the students agreed that

online-learning is a motivator of learning process and enhancer of effective teaching and learning, if they are exposed to the use and facilities are adequate.

Recommendation

1. Students should be given constant training and exposure on the use of online-learning techniques and students should be orientated on their roles for effective learning.
2. Online-learning should be encouraged and promoted in higher institutions. School administrators should create more awareness for both lecturers and students on online teaching to facilitate improved performance.
3. ICT and Technological devices should be provided and more funds released to schools for improved motivation among students in higher institutions.
4. Lecturers should also be encouraged to regularly utilize online platforms for teaching, rating and assessment among others for effective motivation and learning.

References

- Anderson, T.& Dron, J. (2011). Three generations of distance education pedagogy. *The International Review of Research in Open and Distributed Learning*, 12(3), 80-97. doi:10.19173/irrodl.v12i3.890 [[Crossref](#)], [[Web of Science @](#)], [[Google Scholar](#)]
- Chang, C. F. (2010). Information-seeking on the world-wide Web: The effects of searching and browsing strategies on navigational patterns and mental models of navigation in the world-wide Web environment (Unpublished doctoral dissertation, University of Pittsburgh).
- Cheng, K. (2006). A Research Study on Students' Level of Acceptance in Applying E-Learning for Business Courses – A Case Study on a Technical College in Taiwan. *Journal of American Academy of Business*, Volume 8. Number 2. pp: 265-270.
- Connell, B. (2014). "A Poor Grade for ELearning. (Classroom Students Did Better)", *Workforce*, 81(7), 15. *ijET – Volume 9, Issue 4*, paper e-learning and students' motivation: a research study on the effect of e-learning on higher
- Fee, K.H (2009). *Delivering E-Learning: A Complete Strategy for Design Application and Assessment*, London and Philadelphia: Kogan Page.
- FitzPatrick, T. (2012). "Key Success Factors of eLearning in Education: A Professional Development Model to Evaluate and Support eLearning", *US-China Education Review*, 9, 789-795.

- Greenland, S. J., & Moore, C. (2014). Patterns of student enrolment and attrition in Australian open access online education: A preliminary case study. *Open Praxis*, 6(1), 45-54. doi:10.5944/openpraxis.6.1.95
- Jung, I. (2011). Building a theoretical framework of web-based instruction in the context of distance education. *British Journal of Educational Technology*, 32(5), 525-534.
- Kentnor, H. E. (2015). Distance education and the evolution of online learning in the United States; curriculum and teaching dialogue. *Information Age Publishing, Charlotte*, 17(1/2), 21-34. [Google Scholar]
- Marcela, S. (2011), Analysis of the effectiveness of teaching with the support of eLearning in the course of Principles of Management I-performance analysis, Social and Behavioral Sciences, Vol 28,Page (s) 174 – 178
- Nehme, M. (2010). "E-Learning and Students' Motivation", (2010) 20 Legal Education Review, 223-239, SSRN-id2347142, . Retrieved from SSRN: <http://ssrn.com/abstract=2347142>
- Palvia, S. C. (2013). E-evolution or E-revolution: E-mail, E-commerce, E-government, E-education. *Journal of IT Case and Application Research, Editorial Preface Article*, 15(4), 4-12. [Google Scholar]
- Picar, D.(2011) "E-Learning and Motivation", White Paper, ITEC at SFSU, . Retrieved from http://itec.sfsu.edu/wp/860wp/f04_860_picar_elearning_motivation.pdf