Benue State University
Journal of Education
(BSUJE).
Vol. 16 No.2
© 2016
(pp. 74-82)

LECTURERS' PERCEPTION OF YOUTUBE INSTRUCTIONAL VIDEO IN TEACHING OF BIOLOGY FOR HIGHER EDUCATION IN NIGER STATE, NIGERIA

Alabi, T. O.[1];Hellen Thaddeus[2];*Ndatsu, A.,*[3] *&Nwokolo-Ojo Joy PhD*[4]
Department of Science Education, School of Science and Technology Education, Federal University of Technology, Minna-Niger State, Nigeria[1,2,3&4]

Abstract
This study investigated Biology lecturers' perception towards adoption of YouTube instructional video in institution of higher education, Niger State. The study was a descriptive research of the survey type. The research instrument was a 10-item five point Likert scale questionnaire used to elicit the needed information from lecturers. The instrument was validated and the reliability coefficient yielded 0.86 using Kuder Richardson (KR_{21}). The Research questions were answered using frequency count and simple percentage, while the null hypotheses were analyzed using t-test in statistical package for social sciences (SPSS) version 20. The findings of the study revealed that Biology lecturers had positive perception towards YouTube adoption. The results also revealed that there was no significant difference between male and female Biology lecturers' perception towards adoption of YouTube video. Based on the findings, it was recommended that YouTube video should be used in institutions of higher education for teaching and learning of Biology.

Keywords: Lecturers perception, YouTube, ICT, Social Media, Internet, Higher Education.

Introduction

Many of contemporary educational practices have been affected by new technologies like Information Communication Technology (ICT), e-learning and internet that have been developed rapidly in the last two decades (Tsai, 2001). Most institutions of higher education across the world are using internet for educational goals and for improving students' learning outcomes because the information through internet are huge and renewable (Usun, 2003). In this environment, the role of teachers and students dramatically changed. The teachers' role has been changed from being an information transferer into a guide for teaching and learning process, while the students' role has been changed from a passive learner into the center of the education process.

New technologies according to (Dawes, 2001) may provide a lot of opportunities that could support and improve education situation such as; they create new communication channels between teachers and students which are not existed in conventional education. They also create new strategies and techniques that fit with new teaching styles. Therefore, adopting new technologies in our universities will help us to prepare a new generation in order to meet the needs of the 21st century. Social media tools are real examples of current technologies that are extensively used in educational institutions like; schools, universities and libraries.

Studies (Moran, Seaman & Tinti-kane, 2011) found that lecturers believe in the effectiveness of social media as a learning tool and use the technology in their courses. Almost all the lecturers they surveyed reported using social media in courses they were teaching, including both in and outside of class. For example, they posted course content for students to read outside class, required students to read or view social media as part of course assignments, and assigned students to comment on or post to social media sites. Irwin, Ball, Desbrow and Leveritt (2012) found that social media can facilitate university learning activities. Popular social media (e.g., Facebook, YouTube, Twitter, MySpace, LinkedIn, Flickr, Slide share, blogs, wikis, and podcasts) are widely used in higher education. In Moran et al.'s (2011) study, lecturers most frequently named YouTube and Facebook as the social media they use in their teaching practice. YouTube is currently considered the most popular platform for online social networking among university students. As such, it may be utilized as an online environment to facilitate biology learning. To make the learning through YouTube use meaningful for students, teachers or biology instructors have to integrate YouTube as an educational project with pre-determined learning objectives and outcomes (Erick & King, 2012). YouTube was developed for four university courses, originally used to provide information relevant to the courses and allow opportunities for student interaction (Irwin, Ball, Desbrow & Leveritt, 2012). It is now potentially a valuable resource for supporting students' communication and facilitating collaboration with lecturers. Therefore, students have widely adopted its use (Roblyer, 2010).

YouTube can be used to create a learning community where everyone has a voice, anyone can contribute and the value lies equally within the creation of the content and the networks of learners that form around content and shared (Educause Learning Initiative, 2006). It allows the learner to experiment in new media to convey information and knowledge; many educators believe that the act of creating content in virtually any form is a valuable learning exercise (Educause learning initiative, 2006). Despite the benefits YouTube can offer, there are some preconditions for learners to benefit from technology-based learning, especially in developing countries. YouTube learning can only build on a set of basic computer literacy skills. Gunawardana (2005) built on this by stating that learners should go through an introductory session for each program that focuses on

professional development in the use of technology in the classroom.

The creation of YouTube videos required a certain level of digital literacy; however, the internet does not distinguish between literacy and publication (Hartley, 2009). Hartley argued that digital literacy includes the ability to not only consume but contribute; one must understand how the internet works and how to create with it. YouTube is a site that allows many people to not consume, but also create.

YouTube is using the internet to teach and learn, teacher to student and student to student communication, content delivery and enrichment, using the internet as a research tool and using the internet as a publishing tool. The internet provides a huge array of evolving tools that can enhance the teaching process. Selecting and using these tools is YouTube.

It is clear that the use of YouTube videos in instruction is linked to educational and psychological research conducted during the past few decades. First, they provide content for learning (Brown, Collins &Dugnid, 1989). Second, they extend learning beyond text to visual or episodic memory, thereby fostering student dual coding of information (Paivio, 1986) and increase learner retention of information (Fox, 2003). Third, they provide a common experience for learners to discuss and reflect on concept and ideas as in anchored instruction (the Cognition and Technology Group at Vanderbilt, 1990). Fourth, they can also provide an advance organizer for later class lectures, discussions and small group activities (Ausubel, 1978). Finally, they can be created, watched, shared or commented on; hence, they link to the emerging culture of participatory learning (Brown, 2005). Across these five theoretical linkages related to using shared online video in instruction is the realization that video technology will increasingly find a role in the teaching of biology in this century.

Biology is a natural science concerned with the study of life and living organisms, including their structure, function, growth, evolution, distribution, and taxonomy. The field of biology is very broad in scope and can be broken down further into several specialized sub-disciplines which includes; anatomy, cell-biology, genetics and physiology. Therefore in teaching and learning of biology, it is best treated with the aid of diagrams, models and other teaching media which can improve understanding thereby increasing students' achievement in biology class in institution of higher education.

In the past, Nigerian higher institutions employs traditional methods in the course of Biology teaching were students learn in lecture halls in the traditional classroom style that involves listening and memorization (Akinmade,2000). At the end of the twentieth century, Biology teaching had become more vibrant, with interactions between instructors and learners increasing (Cochran-Smith, 2008). With the advancement of tertiary education in Nigeria, Biology teachers as well as instructors in other fields have adopted teaching aids in the course of their teaching activities. The teaching aids are used to facilitate the process of learning through better understanding of concepts being taught. Teaching aids may require help from students in their usage, with the learner observing and making conclusions based on relationships between the content and concepts taught (Okebukola, 2000). Such tools facilitate better understanding of resources. Consequently, such tools are frequently employed in scientific presentations and demonstrations, particularly in Biology, where appropriate devices are available.

Presently, most tertiary institutions that teach Biology have well equipped laboratories, which ensure that what is taught in class is complemented by practical activities. Labs may host either fixed or flexible models, samples or living organisms, in addition to other visual aids in the form of movies or animations of organisms. Considering the global trends in technology adoption, Nigerian tertiary

institutions are in the embryonic stages of integrating technologies such as the Internet in communication and education through YouTube (Utulu&Ayodele, 2012). Some universities have made significant attempts to teach Biology by employing virtual labs in face of lack of services associated with current technologies. A lot of studies exist that stressed the importance of employing technology in the course of teaching Biology. For instance, according to Yapici and Hevedanli (2012), technology adoption facilitates achievement of education objectives, sustains student interest and attention, improves awareness on the study subject, while improving attitude towards the activity in question overall. The above factors stress the importance of applying modern technology such as YouTube in teaching Biology in higher institution.

Higher education is a system which embraces much of the country's research capacity and reproduces majority of the skilled professionals that are required in the labor market. Obanya(1999) views higher education as "taken to embody all organized learning and training activities at the tertiary level. This includes conventional universities, those with the conventional arts, humanities and science faculties as well as specialized universities like institutions specializing in agriculture, engineering, science and technology. It also includes post-secondary institutions such as the Polytechnics and colleges of Education." Higher Education" includes all forms of professional institutions drawing from the available pool of persons who have completed a various forms of secondary school education; institution of the military, the police, nurses, agriculture, forestry, veterinary workers, catering services, tourism, secretarial services and other possible combinations of programs. Even this wide spectrum does not exhaust the possibilities of forms of higher education, such as non-formal higher education. Indeed, any situations in which mature persons are organized for building up their knowledge and skills, to apply knowledge to the analysis and search for solutions to life problems."

According to the National Policy on Education (2004), the goals of tertiary education that is necessary for system performance include to; contribute to national development through high level relevant manpower training; develop and inculcate proper values for the survival of the individual and society; develop the intellectual capabilities of individual to understand and appreciate the local and external environment; acquire both physical and intellectual skills for self relies; promote and encourage scholarship and community service; forge and cement national unity service; promote national and international understanding and interaction.(link with perception)

Perception is a multifaceted concept that has many determinants depending on the disposition of the individual towards a given issue vis-à-vis the value their society attaches to it. Folarin (2002) explained these views better when he states that "perception depends on a complex of variables such as psychological disposition, past experiences, cultural expectations and social relationships." By a way of definition, Akpan (2007) sees the term "perception as the natural ability to understand or notice something quickly." Also, in defining perception, Burgoon & Ruffner (1978) cited by Folarin (2002) stated that perception is "the process of making sense out of experience." Like in this study, the effort is geared towards grasping the sense or feeling YouTube users get out of the numerous social networking sites. It could be deciphered that users' perception of YouTube shall largely be a product of how lecturers view its educational importance.

Due to the role played by technology in the advancement of our society and the educational sector in particular, effective technology integration into teaching and learning in higher education has become the focus of many educators. The role of higher education is focused mainly on the training of manpower, National development and self-reliance. This means teaching with

modern facilities and equipment such as YouTube is essential and can serve as an alternative method of impacting knowledge so as to meet the global and current challenges.

While the use of YouTube in higher education is not new, its prevalence as an educational tool begets attention in regards to lecture support method and students outcome, also Because limited research has been conducted in the area of YouTube usage for educational purposes to enhance learning, this study therefore seek to investigate the perception of Biology lecturers on the adoption of YouTube instructional video

Research Questions

The following research questions were formulated for the study;

i. What is the kind of perception lecturers' have on YouTube as an instructional video in teaching of Biology?

ii. Is there any difference between male and female lecturers' perception of YouTube as an instructional video in teaching Biology?

Hypotheses

The following null hypotheses were formulated and will be tested at 0.05 level of significance:

HO_1: There is no significant difference between male and female lecturers' perception of YouTube instructional video in teaching of Biology.

Methodology

A descriptive survey type was used in carrying out this study. The population of the study comprised of 1,264 lecturers from four government-owned institution of higher education located within Niger State. They include: Federal University of Technology (FUT), Minna; Ibrahim BadamasiBabangida University (IBBU), Lapai; Niger State Polytechnic, Zungeru and Niger State College of Education (COE), Minna. The target population consists of 72 Biology Lecturers (53 males and 19 females). The sample of this study is made up of 45 Biology lecturers (31 males and 14 females) from three selected higher educations in Niger State; they are, COE, Minna; Niger State Polytechnic, Zungeru and IBB University, Lapai. Purposive sampling was employed in the selection of the three institutions because of the nature of course of study, which is Biology. Disproportionate random sampling technique was used to select 45 Biology lecturers. The reason for disproportionate random sampling is because of the difference in number of population in each school selected.

The instrument used for this study was a research-designed questionnaire titledQuestionnaire on Biology Lecturers perception towards adoption of YouTube instructional video (BLPAYIV).The instrument consist of two sections A and B. section A is made up of demographic data of the respondent. Section B contain ten items on lecturers' perception towards the adoption of YouTube as an instructional video. All items in section B consist of positively and negatively worded items with a five likert scale format, and the respondents were guided to respond to each item thus: Strongly agree = SA, Agree = A, Neutral= N, Disagree = D, Strongly disagree = SD. The weights are 5, 4,3,2,1 allocated values and vice versa for negative items respectively.

A total of fifteen (15) questions was set by the researchers. The questionswere subjected to screening, correction and reframing by two educational technologist expert from the department of Science Education, Federal University of Technology, Minna, a Biology expert from the department of Biological sciences, Federal university of Technology, Minna. Based on their suggestion ten (10) questions were finally selected out of the fifteen (15) questions submitted, which the researchers used for the study. The instrument was certified to have both face and content validity. The reliability coefficient of the instrument was computed using Kuder

Richardson (KR_{21}) and a value of 0.84 was obtained.Data collected was analyzed using simple percentage and frequency count to answer the research question while t-test in Statistical Package for Social Sciences (SPSS) version 20.00 was used in testing the hypotheses.

Result

What is the kind of perception lecturers' have on YouTube as an instructional video in teaching of Biology?

Table 1: Responses and percentage Analysis of lecturers' perception on the adoption of YouTube instructional video in the teaching of Biology in institution of Higher Education

S/N	ITEMS	N	Positive Response	%	Negative Response	%
1	The use of YouTube will help students learn more about Biology	45	35	77.78	10	22.22
2	YouTube instructional video can be useful in a collaborative setting when learning Biology.	45	28	62.22	17	37.78
3	using YouTube will improve students grade in Biology	45	31	68.89	14	31.11
4	YouTube is an unreliable means of teaching	45	15	33.33	30	66.67
5	YouTube enhances the effectiveness of my teaching activities.	45	27	60.00	18	40.00
6	Using YouTube to teach is irrelevant to Biology.	45	10	22.22	35	77.78
7	Using YouTube in teaching Biology can improve lecturers' academic productivity.	45	35	77.78	10	22.22
8	YouTube video cannot meet students need in Biology	45	16	35.55	29	64.44
9	YouTube video will give the lecturer greater control over his/her courses	45	29	64.44	16	35.56
10	Using YouTube will make my lesson difficult	45	8	17.78	37	82.22
	TOTAL		**234**	**51.99**	**216**	**48.01**

Table 1 shows that the average percentage of positive and negative responses was 51.99% and 48.00% respectively. This indicates that lecturers have a Positive perception towards adoption of YouTube as an instructional video in the teaching of Biology in institution of higher education in Niger State.

HO_1: There is no significant difference between male and female lecturers' perception of YouTube instructional video in teaching of Biology.

Table 2: t-test Analysis of male and female lecturers' perception of YouTube instructional video in teaching Biology

Groups	N	df	"	SD	t-value	P-value
Males	31		35.16	6.669		
		43			0.174	0.679 □
Females	14		31.21	6.179		

NS: Not Significant at P > 0.05 alpha level

Table 2 indicated that there was statistically no significant difference between the two groups, t-value = 0.174, df = 43, p-value > 0.05 with a mean score of 35.16 and standard deviation of 6.669 for male while the mean score for female was 31.21 with a standard deviation of 6.179. Hence, hypotheses one was not rejected. This implies that both male and female Biology lecturers have a positive perception towards the adoption of YouTube instructional video in the teaching of Biology for higher education.

Discussion

Findings revealed that Biology lecturers had positive perception towards the adoption of YouTube as an instructional video. An overwhelming majority reported that they perceive that YouTube will help students learn more about biology while majority reported that YouTube can improve their academic productivity. The finding is in agreement with the earlier findings of Ajjan and Hartshorne (2008) that lecturers had positive perception regarding the benefits of web 2.0 technologies.

The result also showed that gender has no influence on Biology lecturers' perception towards YouTube adoption in higher education in Niger State. This is also in agreement with the findings of Mayer (2010) that gender has no impact on teachers' perception towards YouTube adoption.

Conclusion

From the findings of this study, it is obvious that biology lecturers have positive perception towards the adoption of YouTube as an instructional video. Majority of the lecturers who participated in this study indicated that YouTube can be useful in a collaborative setting when learning biology, which can in turn improve students' grade. Therefore, YouTube is potentially a valuable resource for supporting the conventional method of teaching in institution of higher education in Niger State.

Recommendations

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

(i) Lecturers should seek out professional development on how to use YouTube technology and incorporate it into their classrooms.

(ii) Curricular for teaching that will inculcate the use of YouTube infrastructure by lecturers and students should be developed.

(iii) Adequate power supply should be provided in and around the school to stimulate the use of YouTube for teaching and learning of biology.

(iv) Universities, polytechnics and colleges of education should introduce compulsory courses on YouTube for students to prepare them for YouTube learning.

REFERENCE

Ajjan, H. J., & Hartshone, R. (2008). Investigating faculty decisions to adopt web 2.0 technologies: Theory and empirical tests. *Internet and Higher Education*, (11) 71-80.

Akinmade, C. T. (2000). Students' learning difficulties in Biology. Prospect for a solution. *Journal of Educational Studies*.

Akpan, C. (2007). Rural peoples perception of radio campaign on HIV/AIDS in Akwa-Ibom State. *International Journal of Communication*, 331-344.

Ausubel, D. (1978). *Educational psychology: A cognitive view (2nd ed)*. New York: Holt, Rinehart and Winston.

Brown, H. D. (2000). *Principles of language learning and teaching (4th ed.)*. New York: Addison Wesley.

Brown, J., Collins, A., & Duguid, P. (1998). Situated cognition and the culture of learning. *Educational Researcher*, 17, 32-41.

Brown, K. (2015, July 15). *Using motion pictures to enhance counselor effectiveness in conducting grief counseling. In Doctoral dissertation. Texas Tech University.* Retrieved from http://hdl.handle.net/2346/1356

Cochran-smith, M., & Feiman-Nemser, S. (2008). *Handbook of research on teacher education: Enduring Questions in changing contexts.* London: Routledge Taylor and Francis Group.

Dawes, L. (2001). What stops teachers using new technologies? In M. Leask (Ed.), Issues in teaching using ICT (pp. 61-79).

Educause. (2006). *Educause learning initiative: 7 things you should know about youtube.* Retrieved from http://www.educause.edu/ir/library/paf/EL17018.pdf

Erick, C. J., & King, D. T. (2012). Non-science majors perception on the use of Youtube videos to support learning in an Intergrated Science lecture. *Journal of College Science Teaching*, 26-30.

F.R.N. (2004). *National Policy on Education.* Federal Republic of Nigeria.

Folarin, B. (2002). *Theories of mass communication:An introductory text.* Abeokuta: Link publication.

Fox, S. (2003, July 21). *"Digital Divisions'. Pew Internet and American Life Project.* Retrieved from http://www.pewinternet.org/pdfs/PIP_Digital_Divisions

Gunawardana, D. (2005). An Empirical Study of Potential Challenges and Benefits of Implementation . *Proceedings of the Second International Conference on e-learning for Knowledge-based Society.* Bangkok .

Hartley, J. (2009). *Uses of youtube: Digital literacy and the growth of Knowledg.* INJ.

Irwin, L., Desbrow, B., & Leveritt, M. (2012). Students' perception of using youtube as an interactive learning resource at University. *Australasian Journal of Educational Technology*, 28(7), 1221-1233.

Mayer, K. A. (2010). Web 2.0 Research; Introduction to the special issue. Internet and Higher Education. 13, pp. 177-178.

Moran, M., Seamen, J., & Tinti-Kane, H. (2011). *Teaching, learning and sharing: How today's higher education faculty use social media.* Boston: Pearson Learning Solutions.

Obanya, P. (1999). *Higher Education for an Emergent Nigeria: Faculty of Education, University of Ibadan.* Ibadan: Heinemann Education Books (Nigeria Plc).

Oghenevwede, O. E. (2010). Effects of Discovery and Inquiry Approaches in Teaching and Learning of Biology on Secondary Schools Students' Performance in Delta State, Nigeria. *Journal of Research in Education and Society.*

Okebukola, P. (2005). Computer Assisted Instruction (CAI) and Communication among Adult . *Nigerian Journal of Computer Literacy.*

Paivio, A., & Clark, J. M. (1986). *The role of Topic and Vehicle Imagery in Metriphoe Comprehension. Communication.* Retrieved from http://www.pewinternet.org/pdf/r/230/reportdisplay.asp

Roblyer, M. (2010). Findings on Facebook in higher education: A comparison of college faculty and students uses and perceptions of social networking sites. The internet Higher Education. 13(3), 134-

Tsai, C.C. (2001). The interpretation construction design model for teaching science and its applications to internet-based instruction in Taiwan. *International Journal of Education Development*. 21, 401-415.

Utulu, S., & Ayodele, A. (2012). Use of mobile phones for project based-learning by undergraduate student of Nigerian private universities. International Journal for Education and Development using Information and Communication Technology (IJEDICT), 8(1).

Usun, S.C. (2004). Factors affecting the application of Information and Communication Technologies (ICT) in distance education, *Turkish Online Journal of Distance Education, 5(1).*

Vanderbilt, T. C. (1990). Anchored instruction and its relationship to situated cognition. *Educational Researcher*, 19(6), 2-10.

Yapici, I., & Hevedanli, M. (2012). *Pre-service Biology teachers attitude towards ICT using in Biology teaching procedia-social and behavioural sciences.*