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**FROM THE COLUMN EDITORS**

Welcome to the Global Postcards column! We are so excited to bring you news and projects from around the world. We have one main contribution for this column: a librarian, Taiwo Akinde, and a lecturer, Airen Adetimirin, both of the University of Ibadan in Nigeria show us an investigation of the effect of attitude to use on the use of Educational Support Systems (ESS) by lecturers for teaching in the university-based library schools in their country. Thanks to the contributors for this issue, and please keep the submissions coming! If you would like to send a submission, please contact either of the column.s co-editors: Jacqueline Solis, jsolis@email.unc.edu, and Robin Kear, rlk25@pitt.edu

# Effect of Lecturers' Attitude on Use of Educational Support Systems for Teaching in University-based Library Schools in Nigeria

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## Background to the study

Educational Support Systems (ESS) are information, communication, and telecommunication technologies that are deployed for instructional preparation and delivery (in the real or virtual classroom) while educational support software are computer applications and courseware that are deployed by educators (either online or offline) for lesson preparation, production, duplication, and dissemination. ESS are positioned to aid universities and educators in the actualization of objectives of teaching, learning and research through the provision of: (1) information materials needed for lecture preparation and research and (2) technologies needed for the production, duplication, updating, and delivery of lecture with ease.

ESS provide an array of tools and resources for acquiring, organizing, communicating, producing, promoting, presenting, and using ideas and information for thinking, learning, teaching, decision-making, expressions, and leisure. These tools and resources could also be used for collaborative knowledge building in the classroom while at the same time accessing a broader educational community and knowledge-base beyond the walls of the classroom. These technology experiences provide the skills that will enable educators and their students to perform effectively in the present global, digital, information-based world (Mumtaz, 2000; Onyebinama, 2007).

ESS are not only tools for transferring instructional material and rehearsal but a medium for learning, discovering, sharing, and creating knowledge (Cavas, Cavas, Karaoglan, & Kisla, 2009). They provide opportunities for the use of computer-assisted instructional packages to assist in the research and teaching activities of educators. In addition, the introduction of computer mediated instruction, another ESS, as an intelligent innovation in the educational system, according to Ruthven, Nennessy, and Deaney (2005), has beneficially revolutionized the system; creating e-classrooms where educators can teach with interactive boards, harnessing the computer technology on individualized basis.

Olagunju, Bolaji, and Adesina (2012) maintained that computer mediated instruction has enabled the fusion of educators' training and retraining in technology and the production of new and innovative curriculum models. It has also enabled regular, enriching, and remedial instructions, using computer which is known for its ability to reproduce information very fast and repeat activities without redundancy. Technology is changing educators' role from a traditional teacher to that of a coach and facilitator in the classroom

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(Abimbade, 2014; Paraskeva, Bouta, & Papagianni, 2008) while at the same time developing students' skills for cooperation, problem solving, and lifelong learning (Afshari, Abu Bakar, Su Luan, Abu Samah, & Say Fooi, 2009).

Technology integration in classroom is a complex phenomenon that involves understanding educators' beliefs and attitude about teaching, learning, and technology. To Trucano (2005), the existence of technology does not transform educators' practices in and of itself; however, he maintained that technology can enable them to transform their practices, given their readiness and attitude. Grainger and Tolhurst (2005) asserted that the effectiveness or otherwise of educational technology is determined not by its mere presence in the classroom but by educators' acceptance and readiness to use it. These arguments revealed that educators' role is really critical as they are the ones who have to decide whether or not to use the available technological tools in schools. Therefore, educators' disposition is likely to have a significant effect on the introduction of technological tools in teaching and learning (Tasouris, 2009). Hsu, Wu, and Hwang (2007) in a study carried out in Taiwan found educators' beliefs and attitude toward technology as factors that most affected their technology-based teaching practices. Hence, this study investigated the effect of library educators' attitude to use on their use of ESS for teaching in university-based library schools in Nigeria.

Attitude, in this study, refers to library educators' like or dislike, positive or negative disposition, thought and/or feelings towards the use of ESS for teaching leading to their acceptance or rejection. Afshari, Abu Bakar, Su Luan, and Afshari (2010) argued that attitude is difficult to change as people are generally more comfortable with what they have learned or known due to stereotyping, fear of taking risks, intolerance to ambiguity, and possibly the need to maintain tradition. Peeraer and Petegem (2011) pointed out that despite the attraction and obvious relevance of new learning theories and policy, it is not easy in practice to give up or change the traditional habits of hierarchical organization and transmission model of the authoritative teacher-passive student relations.

If educators' belief is at variance with the use of ESS then, they may likely not use them in spite of their proficiency. Educators' attitude and their use of ESS have been found in the past to be positively correlated (Hennessy, Harrison, & Wamakote, 2010; Kumar, Che Rose, & D'Silva, 2008; Peeraer & Petegem, 2011). It has also been found that positive attitude would bring forth a higher technology use and vice versa. For instance, the study of Kumar et al. (2008) showed that educators who viewed technology as positive were able to demonstrate greater usage of technology while those who viewed technology from a negative perspective did not acquire and integrate knowledge and skills of educational technology in their classrooms.

Hennessy et al. (2010) in their work on educator factors influencing classroom use of technology in Sub-Saharan Africa found that the psychological factors of an educator's own beliefs and attitude to technology are both primary facilitators and barriers to the educator's use of technology in the classroom. The study revealed a strong correlation between educators' attitude towards new technology and the technology's acceptance; hence, it can be deduced that the acceptance and use of ESS for teaching may be based on educators' attitude towards the use of these technologies. According to Peeraer and Petegem (2011), there is little or no point in providing many equipment, applications, and hardware if educators do not have the relevant attitude to change their classroom practices.

Summarily, Pierson (2001) argued that in evaluating the integration decisions made by educators, there must be an acknowledgement that technology integration depends on educators' beliefs and attitude to the use of technology for teaching. Hence, this study, on the assumption that some of these ESS are available and accessible to library educators, postulated that the educators' positive or negative attitude to the use of ESS for teaching may affect the use of ESS for teaching in university-based library schools in Nigeria. Other factors affecting the use of ESS by the library educators for teaching apart from attitude were held constant.

## Statement of the problem

In many of the public universities in Nigeria, administrative attention is not given to improving teaching and learning with technology and often investment are done in latest technologies without considering educators' needs, thoughts, belief, feelings, interests, disposition, and attitude. This has resulted in less desirable ad-hoc implementations. In some of the private universities where ESS are procured, it has been observed that they are not being put into actual but to secure pass marks during accreditation exercises.

Literature search made for the study revealed that, though much has been written about the general use of Information and Communication Technologies (ICTs) and multimedia resources by secondary school teachers, students, librarians, and general faculty in universities in Nigeria, personal factors affecting the use of technology by library educators for teaching have not been well researched into. It was on this premise that the study investigated the effect of library educators' attitude to use on their use of ESS for teaching in university-based library schools in Nigeria with the aim of proffering solution to the identified problem in order to enhance teaching quality and effectiveness.

## Objectives of the study

The main objective of this study was to investigate the effect of attitude to use on the use of ESS by library educators for teaching in university-based library schools in Nigeria. The specific objectives were to:

i. ascertain how library educators actually use ESS for teaching in university-based library schools in Nigeria;
ii. determine the educators' attitude towards the use of ESS for teaching; and
iii. examine how library educators' attitude towards use affect their use of ESS for teaching in university-based library schools in Nigeria.

## Research questions

The research questions are:

1. How do library educators actually use ESS for teaching in university-based library schools in Nigeria?
2. What is the attitude of library educators towards the use of ESS for teaching in university-based library schools in Nigeria?

## Hypothesis

This null hypothesis was tested in the study at 0.05 level of significance:

1. Library educators' attitude towards the use of ESS for teaching does not significantly affect use.

## Scope of the study

The study is an investigation of the effect of attitude to use on the use of ESS by library educators in university-based library schools in Nigeria. The population of the study consists of all (full/part time) library educators that were engaged by the 27 university-based library schools in Nigeria as of the 2014–2015 academic session. Attitude (positive or negative) is the teacher-level factor that was examined in the study. The effect of this factor on use of ESS for teaching was determined using inferential statistics.

## Significance of the study

The findings of this research could provide insights to university authorities in deploying better "teacher-accepted" and "usable" ESS and in preparing potential users of the new technology. This is because knowing the importance of ESS in Library and Information Science (LIS) education and understanding the factors that affect technology-assisted instruction could help academic managers, learned societies and systems, and software developers to create support mechanisms, product and services that will easily attract more educators to adopt this technology-driven teaching and learning environment.

An exploration of the effect of educators' attitude on their use of these systems may contribute to decisions about future developmental needs because more will be known about the educators' preparedness for change. The information gathered from this study could be helpful in identifying and providing more up-to-date information on the current practices in the use of ESS in university-based library schools.

The results of this study would serve as a reference point for other academic departments in universities in Nigeria and other higher institutions of learning in the country as their educators are assisted in developing the most effective but sustainable ways of embracing and using ESS for teaching, hoping to enjoy the full opportunities it has come to offer. The study, through its logical review of relevant literature, findings, and recommendations, is expected to contribute to knowledge and be an addition to the body of literature in LIS that will be available to future students, researchers, and educational policy makers for consultation.

## Attitude of educators to the use of educational support systems: A literature review

Attitude is a mind-set or a tendency to act in a particular way due to both an individual's experience and environment. It is a settled way of thinking or feeling.

Attitude explains actions and behavior and it serves several functions. According to Bluff (2011), it serves a function of adaptation by facilitating an individual's acceptance and integration into a group and a knowledge function by helping the individual to interpret phenomena and behave accordingly. Attitude can also have a defense function, protecting an individual from understanding himself or herself as vulnerable or insignificant, or to deny unpleasant realities which are threatening or anxiety producing.

Attitude results from the complex interactions of feelings or emotions, personality, beliefs, point of view or thought, values, and motivations. Attitude can be positive or negative. Attitude is positive when the feelings and/or disposition towards an object, a person, an idea, or situation are favorable and negative, if unfavorable. Attitude in this study refers to educators' liking or disliking, positive or negative thoughts, feelings, and disposition towards the use of ESS for teaching leading to acceptance or rejection behavior.

Kumar et al. (2008) in their empirical study on Malaysian teachers' readiness to use technology in the classroom defined attitude towards a behavior as a person's general feeling of favorableness or unfavorableness for that behavior. Ajzen (2005) in his book titled "attitudes, personality, and behavior" explained that attitudes, which are positive and negative judgments that are constructed out of our beliefs and experiences, are primary indicators of a person's intent to perform a behavior. Educators' attitude about teaching and learning with ESS are central to integration. Mumtaz (2000) in a review of literature on factors affecting teachers' use of ICT maintained that schools can go only so far to encourage technology use; actual take-up depends largely on educators' personal feelings, skills, and attitudes to technology in general. When examining Korean educators' intention to integrate technology in their teaching, researchers found that attitude was a much greater indicator of an educator actually using technology (Lee, Cerreto, & Lee, 2010, cited by Cullen & Greene, 2011).

A study of the attitude of a sample of educators in London cited by Mumtaz (2000) revealed that educators who successfully made use of ESS had a positive rather than negative attitude towards technology and that educators who have a positive attitude towards technology will be positively disposed towards using it in the classroom. Such educator, according to the study, prefers student choice rather than educators' direction. However, educators who preferred directive styles of teaching, according to the study, tended to rate their own competence as low and made use of helpers with technology while educators with positive attitude support student empowerment as learners and have a preference for individual study rather than students receiving instruction. This was confirmed by later findings of other researchers (Hermans, Tondeur, van Braak, & Valcke, 2008; Mueller, Wood, Willoughby, Ross, & Specht, 2008) that identified an apparent dominance of belief and attitude with regard to technology use and successful integration into the classroom and the impact of attitude in predicting ESS use.

In another survey on exploring the extent of technology adoption among 212 educators in Malaysia carried out by Bee Theng and Chia Hua (2008), most of the educators held a reasonably positive attitude towards technology adoption in school and appreciated the use of technology in enhancing teaching and learning. Results also show that they were positive towards further integration of technology into classroom instruction and felt that among the various stakeholders, educators as the classroom practitioners should have a greater say in deciding how technology is being used in schools. Jegede (2008), who investigated the relationship between attitudinal characteristics and the level of ICT use by Nigerian teachers, found that attitude was influential.

Gülbahar and Guven (2008) in a survey on technology usage and the perceptions of social studies teachers in Turkey also stated that educators' belief in the effectiveness of technology; that the use will not cause any disturbances and that they have control over the technology may affect the introduction of technology into classrooms. In another study on Turkish teachers' attitudes while approaching new technologies, Demirci (2009) affirmed that, an educator who easily accepts and incorporates new ideas, changes, and reforms into his practices is more likely to integrate computer applications in his teaching.

Tasouris (2009) investigated physics teachers' beliefs about the use of technology in Cyprus and concluded that teachers' unenthusiastic attitude towards the use of technology because of lack of ability; teaching and learning beliefs; or the teacher being right about technology as an element not essential for good teaching, might lead the teacher not to support teaching and learning practices with technology. The work of Mumtaz (2000) offered an explanation as to why

new technologies have not changed schools as much as other organizations: cultural beliefs about what teaching is; how learning occurs; what knowledge is proper in schools; and the student-teacher (not student-machine) relationship dominate popular views of proper schooling. This may explain educators' reluctance to change the status quo. According to Mumtaz (2000), even if educators are provided with up-to-date technology and supportive networks, they may not be enthusiastic enough to use it in the classroom if they have negative cultural beliefs towards its use.

Educators' understanding of how ESS will benefit their work and their students' learning may inform their attitude towards its use, hence, there is need to measure educators' beliefs and understanding of the role of ESS within their subject area. Educators want to know if they can integrate ESS with education in ways that effectively link with the content of curriculum, as well as the different components and stages of the learning process (Cox, 2008, cited by Peeraer & Petegem, 2011; YuLi, 2008).

In a study of educators who did not change their practices after targeted professional development in Northern part of West Virginia, Palak and Walls (2009) found that the educators' attitudes toward technology were the strongest predictors of whether or not they would incorporate technology-rich instructional strategies into their classrooms. Attitude towards ESS use may affect educators' use of ESS in the classroom and the likelihood of their benefiting from training. This is because positive attitudes often encourage less technologically capable educators to learn the skills necessary for the implementation of technology-based activities in the classroom (Afshari et al., 2009). According to Hsu et al. (2007) shaping educators' beliefs, values, and rationale will help them in properly integrating ESS into the classrooms and daily teaching.

Cavas et al. (2009) inquired into science teachers' attitudes toward technology in education and teachers' personal characteristics. Using a descriptive survey on 1,071 secondary school teachers distributed into seven geographic regions of Turkey, they revealed that, though, Turkish teachers have positive attitude toward technology, in most cases, teachers' attitude is not sufficiently investigated in the early stages of educational technology implementation, hence, unsuccessful and ad-hoc implementations.

Similarly, Drent and Meelissen (2008) conducted a study on factors which stimulate or limit the innovative use of technology by educators in the Netherlands. The study used a questionnaire to collect data from 210 educators and interviewed four of them. Several factors, such as a student-oriented pedagogical approach, a positive attitude, computer experience, willingness to change, and personal entrepreneurship of the educator, were found to have direct positive effect on the innovative use of technology by the educator. In comparing these factors as predictors of computer use, it was identified that attitude toward computer has the most significant effect on technology use by educators.

Another study by Eteokleous (2008) evaluated computer technology integration in a centralized school system in Cyprus and reported that despite past reports of an increased number of computers at schools, computers are not extensively used in classrooms in many countries because of poor teacher attitude. Expatiating further, Demirci (2009) in a study of how geography teachers in Turkey approach new technologies argued that supplying schools with high number of computers does not necessarily mean that educational goals to integrate technology into the curriculum are accomplished. What is needed, according to him, is effective integration of technology into teaching resulting from a positive change in educators' attitude to technology. Therefore, merely making ESS available to educators and students in schools and classrooms is not sufficient to attain educational goals and to ensure that ESS contributes to teaching and learning.

To achieve positive change in educators' attitude to technology, Afshari et al. (2010), while looking into contributing factors to Iranian principals' level of computer use, proffered that individuals' behavior can be changed by identifying their attitude and encouraging adjustment. They submitted that attitude of participants revolved in an educational innovation are important factors in determining to what degree and with what speed change will be effected. Therefore, any successful transformation in educational practice requires the development of positive user attitude towards new technology.

The development of educators' positive attitudes toward the use of ESS in teaching is a very significant factor not only for increasing ESS integration but also for avoiding educators' resistance to ESS use (Gülbahar & Guven, 2008). In a review of literature on factors affecting teachers' use of ICT, Afshari et al. (2009) opined that if teachers want to successfully use technology in their classes, they need to possess positive

attitude to use technology. Such attitude, they concluded, is developed when teachers are sufficiently comfortable with technology and are knowledgeable on its use.

Educators' attitude is the major predictor of not only the present use of ESS in instructional settings but also of future use. This is because educators' attitude toward ESS will shape their experiences and that of their students (Gülbahar & Guven, 2008). Educators' ESS use behavior can have a critical effect on students' confidence and attitude towards technology as they provide important role model to their students. Moreover, investments on educators are also anticipated to create a technologically literate workforce who in turn would generate competent and confident performers in a global, IT-intensive work-environment (Yusuf & Balogun, 2011). Hence, the key to successful use of ESS for teaching, especially with educators who are new to it, according to Hsu et al. (2007), is to find the methods which can help educators face, review, and adjust their beliefs, attitude, and instructional strategies regarding educational technology.

## Methodology

Descriptive survey design was adopted for the study. This is because it is the most appropriate in systematically collecting and analyzing data without any manipulation or control. The target population of this study consisted of all (full/part time) library educators engaged in the 27 universities presently offering LIS courses which totaled 293 as of the 2014–2015 academic year. The sampling technique that was adopted for the study is total enumeration. All the 293 library educators engaged in the 27 universities presently offering LIS program in Nigeria were covered in the study. A questionnaire was administered on library educators.

The questionnaire tagged "Library Educators' Attitude to Instructional Support" was used to collect data for the study. It was chosen as an instrument because it is appropriate considering the nature of the data, the research design and analyses required, number of respondents, their dispersion, and time. The questionnaire consists of three sections or scales. Section A of the questionnaire collected the library educators' personal data, such as name of school, age, gender, the level taught, length of teaching experience, and personal ownership of some technological tools. This section had eight items, out of which one is unstructured or open ended; out of the seven structured or close ended multiple choice questions, five required single answer option while the respondents can choose more than one answer (ticking freely) for one item. The last item which is divided into two parts requires a "yes" or "no" answer. Section B was on library educators' actual use of support and contained 20 items measuring the dependent variable "Use." The items were developed by the researcher from the insights gotten from the literature reviewed. The respondents were asked to indicate their level of agreement to statements on how they actually put ESS to use for teaching. Strongly agreeing and/or agreeing to the statements show actual use while disagreeing and/or strongly disagreeing with the statements show non-use in that regard. Section C, however, collected data on the attitude of library educators towards the use of support. The scale was adapted from the studies of Hsu et al. (2007), Tella, Tella, Toyobo, Adika, and Adeyinka (2007), Gülbahar and Guven (2008), Phelps and Maddison (2008), Demirci (2009), Adeosun (2010), and Yusuf and Balogun (2011). The attitude scale contained 20 items that describe various attitudes towards the use of ESS for teaching. The scale had 10 items each for both positive and negative attitudes. The respondents were asked to indicate their level of agreement to the attitudinal statements. Strongly agreeing and/or agreeing to a positive statement and disagreeing and/or strongly disagreeing with a negative statement showed a positive attitude and vice-versa.

Face, content, and construct validity of the instrument was established by subjecting it to initial item screening and several vetting by three experts (from the fields of Library Studies, Educational Technology and Information Science) who were asked to affirm the adequacy, clarity, technicality, and exhaustiveness or otherwise of the items in line with the research objectives. The exercise helps in improving item quality and removing some ambiguities. For pretest, a trial data collection was made on 22 library educators from four federal polytechnics in Nigeria (Nekede, Oko, Ede, and Offa) between September and October, 2014. The data collected from the pretest was used to ascertain the reliability of the questionnaire by calculating internal consistency and reliability coefficient values for Sections B and C of the questionnaire using Cronbach Alpha method contained in the Statistical Package for Social Sciences (SPSS) version 18. Some of the items with low reliability coefficients (either because

**Table 1.** Internal consistency and reliability coefficients of questionnaire scales.

| Sections | Title | Alpha values (*r*) |
|---|---|---|
| B | Actual use | 0.951 |
| C | Attitude | 0.939 |

they were misunderstood; failed to convey the right meaning and/or collect the desired answers) were eliminated. The Cronbach Alpha values for the remaining items in the questionnaire were confirmed for the two section or scales and the result is as presented in Table 1.

According to Hair, Black, Babin, and Anderson (2010), a Cronbach Alpha value of more than 0.70 indicates that the items are homogeneous, measuring the same constant and demonstrating that the questionnaire is a reliable measuring instrument. Thus, the questionnaire used in this study showed a good level in terms of reliability because the reliability coefficient values for all the sections or scales were above 0.70.

The questionnaire was administered on all the library educators engaged in the 27 universities in their respective schools, after obtaining permission from the heads of LIS department, on a hand-to-hand basis. This was to allow for early responses, easy and immediate returns, and an opportunity to clarify doubt, if any. Five research assistants were engaged and trained to assist in collecting the data with the researcher. A letter to the respondents, introducing the survey and the researcher; describing the reasons for the survey and soliciting the educators' help in promptly filling and returning the questionnaire was the cover page of the questionnaire.

The administration of the questionnaire took place during the school hours in each of the schools. A visit-day was allocated to each school to distribute questionnaire. Copies of the questionnaire that were filled and returned immediately were collected. A return visit of 1-week interval was made to some schools to collect copies of the questionnaire outstanding. After the initial retrieval, reminder SMS were sent through some contacts in universities with low rate of return, to those who had not responded, in order to ensure at least 50% rate of response per university. The researcher resorted to postal and courier services and/or phone call to retrieve copies of the questionnaire outstanding. The data collection exercise took from 2 weeks to 1 month per university, in the first instance, and 3 months (February to April, 2015) in all. Out of the 293 copies of the questionnaire distributed, 211 copies were returned out of which only 204 copies were found useful giving a response rate of 72%.

The data collected from the respondents was described, summarized and analyzed with descriptive statistics (that is, frequency distribution and percentages displayed in tables) and inferential statistics (that is, *t*-test,) using the SPSS version 18. The two research questions were answered using descriptive statistics while the null hypothesis was tested using independent *t*-test. Statistical significance test was made at alpha 0.05.

## Research findings

The demographic profile of the library educators is displayed in Table 2.

The highest numbers of respondents were found in the Assistant Lecturer (49; 24.0%) and Senior Lecturer (44; 21.6%) cadres while the lowest numbers were respondents of professorial cadre (29; 14.3%) and Graduate Assistants (8; 3.9%). Majority of the respondents were Male (135; 66.2%) and in the age categories of 40–49 years (61; 29.9%) and 30–39 years (59; 28.9%). Respondents between the ages of 60 years and above (19; 9.3%) and 20–29 years (17; 8.3%) were found to be lowest with the average age as 40 years. Most of the respondents were holders of Master's (99; 48.5%) and Doctoral (89; 43.6%) degrees with the lowest being Bachelor's degree holders (10; 4.9%).

Respondents with 0–3 years of experience (56; 27.5%) and 4–7 years of experience (48; 23.5%) were in the majority while the lowest numbers were found among the 20 years and above (24; 11.8%) and 16–19 years (14; 6.9%) categories. Two-thirds of the respondents (131; 64.2%) teach students at the undergraduate level while less than one-fifth (38; 18.6%) teach at the MPhil/PhD level. On personal ownership of ESS, the highest number had a personal computer (193; 94.6%) and e-mail boxes (173; 84.8%) while the lowest number had a blog/website (8; 0.04%). When asked whether they used their personally acquired ESS for teaching, more than half of the respondents answered in the affirmative (112; 54.9%).

## Analysis of research questions

Two research questions were answered in the study. The findings are presented below.

**Table 2.** Demographic profile of library educators.

| S/N | Status | Frequency count ($n = 204$) | % |
|---|---|---|---|
| a. | Professor | 14 | 6.9 |
| b. | Reader/associate professor | 15 | 7.4 |
| c. | Senior lecturer | 44 | 21.6 |
| d. | Lecturer I | 41 | 20.1 |
| e. | Lecturer II | 33 | 16.2 |
| f. | Assist. lecturer | 49 | 24.0 |
| g. | Graduate assistant | 8 | 3.9 |
| S/N | Gender | | |
| a. | Male | 135 | 66.2 |
| b. | Female | 66 | 32.4 |
| c. | No response | 3 | 1.5 |
| S/N | Age | | |
| a. | 20–29 years | 17 | 8.3 |
| b. | 30–39 years | 59 | 28.9 |
| c. | 40–49 years | 61 | 29.9 |
| d. | 50–59 years | 44 | 21.6 |
| e. | 60 years and above | 19 | 9.3 |
| f. | No response | 4 | 2.0 |
| S/N | Highest educational qualification | | |
| a. | Bachelor's | 10 | 4.9 |
| b. | Master's | 99 | 48.5 |
| c. | MPhil | 6 | 2.9 |
| d. | PhD | 89 | 43.6 |
| S/N | Teaching experience | | |
| a. | 0–3 years | 56 | 27.5 |
| b. | 4–7 years | 48 | 23.5 |
| c. | 8–11 years | 33 | 16.2 |
| d. | 12–15 years | 25 | 12.3 |
| e. | 16–19 years | 14 | 6.9 |
| f. | 20 years and above | 24 | 11.8 |
| g. | No response | 4 | 2.0 |
| S/N | Level of students taught (Tick freely) | | |
| a. | Bachelor's | 131 | 64.2 |
| b. | Master's | 64 | 31.4 |
| c. | MPhil/PhD | 38 | 18.6 |
| S/N | Personal ownership of ESS tools (Tick freely) | | |
| i. | Personal computer (laptop/desktop) | 193 | 94.6 |
| ii. | Personal blog/website | 8 | 0.04 |
| iii. | Personal e-mail box/address | 173 | 84.8 |
| iv. | Personal modem/ISP | 148 | 72.6 |
| v. | Social networking media account | 134 | 65.7 |
| vi. | Handheld/mobile technologies and smartphones | 138 | 67.7 |
| S/N | Instructional use of personal ESS | | |
| a. | Yes | 112 | 54.9 |
| b. | No | 49 | 24.0 |
| c. | No response | 43 | 21.1 |



### *Research question 1: How do library educators actually use ESS for teaching in university-based library schools in Nigeria?*

The results in Table 3 revealed how library educators actually use ESS for teaching in university-based library schools in Nigeria. The respondents were asked to indicate their level of agreement to statements on how they actually put ESS to use for teaching. For easy descriptive analysis, strongly agreeing and/or agreeing to the statements show actual use while disagreeing and/or strongly disagreeing with the statements show non-use in that regard.

Actual use of ESS for teaching: A total of 52.6% of the educators agreed that they mandated students to submit their tests, assignments, seminars, and projects via ESS while 52.2% of them agreed to using ESS to distribute tutorials and/or "take-homes" to students. An additional 51.4% of the educators agreed that they used ESS to display or send subjects' syllabi and/or courses' outlines.

Non-use of ESS for teaching: The results revealed that 86.4% of the educators disagreed that ESS could be used to search for literature relevant to their teaching subject while 80.2% of them disagreed to using ESS to read in preparation for lectures. A total of 80% disagreed to developing lecture content with ESS while a total of 78.1% of the respondent disagreed to using ESS to produce lesson plans and/or notes. An additional 77.6% disagreed to using ESS for citations and

**Table 3.** Actual use of educational support systems by the library educators.

| S/N | Statements | Strongly agree | | Agree | | Disagree | | Strongly disagree | |
|---|---|---|---|---|---|---|---|---|---|
| | | N | % | N | % | N | % | N | % |
| 1. | I use ESS to read in preparation for lectures. | 13 | 6.8 | 25 | 13.0 | 71 | 37.0 | 83 | 43.2 |
| 2. | I use ESS to search for literature relevant to my teaching subject. | 9 | 4.7 | 17 | 8.9 | 75 | 39.3 | 90 | 47.1 |
| 3. | I use ESS to develop lecture content. | 12 | 6.3 | 26 | 13.7 | 79 | 41.6 | 73 | 38.4 |
| 4. | I use ESS to produce lesson plans or notes. | 13 | 7.0 | 28 | 15.0 | 81 | 43.3 | 65 | 34.8 |
| 5. | I use ESS for citations and referencing purposes. | 11 | 5.9 | 31 | 16.6 | 85 | 45.5 | 60 | 32.1 |
| 6. | I use ESS to charge/discharge library resources on loan to me. | 39 | 20.6 | 51 | 27.0 | 56 | 29.6 | 43 | 22.8 |
| 7. | I use ESS to subscribe for and receive relevant materials from publishers. | 30 | 16.1 | 50 | 26.9 | 58 | 31.2 | 48 | 25.8 |
| 8. | I use ESS to display subjects' syllabi and/or courses' outlines. | 31 | 16.6 | 65 | 34.8 | 52 | 27.8 | 39 | 20.9 |
| 9. | I use ESS to deliver lectures in the classroom (real/remote). | 29 | 15.5 | 57 | 30.5 | 60 | 32.1 | 41 | 21.9 |
| 10. | I reproduce, replay and duplicate lecture content with ESS. | 29 | 15.4 | 50 | 26.6 | 64 | 34.0 | 45 | 23.9 |
| 11. | I use ESS to publish class-works or projects. | 33 | 17.8 | 57 | 30.8 | 62 | 33.5 | 33 | 17.8 |
| 12. | I mandate students to submit their tests, assignments, seminars and projects via ESS. | 27 | 14.2 | 73 | 38.4 | 59 | 31.1 | 31 | 16.3 |
| 13. | I use ESS to distribute tutorials and/or "take-homes" to students. | 28 | 15.1 | 69 | 37.1 | 60 | 32.3 | 29 | 15.6 |
| 14. | I use ESS to store and retrieve my past lesson notes. | 20 | 10.6 | 53 | 28.2 | 71 | 37.8 | 44 | 23.4 |
| 15. | I use ESS to source for graphics, pictorials, and audio-visuals to enhance my lectures. | 24 | 12.7 | 44 | 23.3 | 75 | 39.7 | 46 | 24.3 |
| 16. | I use ESS to source for current thoughts, ideas, and information to enhance my lectures. | 12 | 6.4 | 35 | 18.5 | 87 | 46.0 | 55 | 29.1 |
| 17. | I use ESS to assess, average my students' grades and generate reports. | 27 | 14.3 | 58 | 30.7 | 66 | 34.9 | 38 | 20.1 |
| 18. | I use ESS to present, submit, and publish my students' reports. | 29 | 15.3 | 57 | 30.2 | 70 | 37.0 | 33 | 17.5 |
| 19. | I use ESS to store and keep track of my students' grades (marks). | 25 | 13.2 | 48 | 25.4 | 73 | 38.6 | 43 | 22.8 |
| 20. | I use ESS to source for bibliographic details of good materials. | 14 | 7.4 | 29 | 15.3 | 83 | 43.7 | 64 | 33.7 |



referencing purposes while 77.4% of them disagreed to using ESS to source for bibliographic details of good materials. Moreover, a total of 75.1% disagreed to using ESS to source for current thoughts, ideas, and information that will enhance their lectures.

A total of 64.0% disagreed to using ESS to source for graphics, pictorials, and audio-visuals to enhance their lectures while 61.4% of them disagreed to using ESS to store and keep track of students' grades. Furthermore, 61.2% of the educators disagreed to using ESS to store and retrieve past lesson notes while 57.9% of them disagreed to using ESS to reproduce, replay, and duplicate lecture content. An additional 57.0% of them disagreed to using ESS to subscribe for and receive relevant materials from publishers while 55.0% disagreed to using ESS to assess, average students' grades, and generate reports.

The results in Table 3 further revealed that 54.5% of the educators disagreed to presenting, submitting, and publishing their students' reports with ESS. Additionally, 54.0% of them disagreed to using ESS to deliver lectures in the classroom (real/remote) while a total of 52.4% of the educators disagreed to using ESS to charge/discharge library materials on loan to them. Finally, 51.3% of the educators disagreed to using ESS to publish class-works or projects.

Overall, out of the 20 statements on different instructional activities, only three indicated actual use of ESS by the library educators. This means that ESS have not been actually used for the instructional activities highlighted in this study.

### *Research question 2: What is the attitude of library educators towards the use of ESS for teaching in university-based library schools in Nigeria?*

The results in Table 4 show the attitude of library educators towards the use of ESS for teaching in university-based library schools in Nigeria.

The result reveals both positive and negative attitude. For instance, strongly agreeing and/or agreeing to a positive statement and disagreeing and/or

**Table 4.** Attitude of library educators towards the use of ESS for teaching.

| | | Strongly agree | | Agree | | Disagree | | Strongly disagree | |
|---|---|---|---|---|---|---|---|---|---|
| S/N | Statements on attitude | N | % | N | % | N | % | N | % |
| 1. | I think ESS is useful in the dissemination of course contents. | 87 | 46.0 | 85 | 45.0 | 15 | 7.9 | 2 | 1.1 |
| 2. | In my own opinion, ESS make courses more interesting. | 75 | 39.7 | 103 | 54.5 | 9 | 4.8 | 2 | 1.1 |
| 3. | To me, time spent in using ESS for teaching is worthwhile. | 66 | 34.7 | 105 | 55.3 | 14 | 7.4 | 5 | 2.6 |
| 4. | What ESS stands for is important to me as a library educator. | 57 | 30.2 | 84 | 44.4 | 43 | 22.8 | 5 | 2.6 |
| 5. | It is necessary for me to use ESS for library science lectures. | 53 | 28.2 | 101 | 53.7 | 26 | 13.8 | 8 | 4.3 |
| 6. | I think teaching through ESS is a good idea. | 72 | 38.9 | 96 | 51.9 | 14 | 7.6 | 3 | 1.6 |
| 7. | I am aware of the opportunities that use of ESS offers. | 71 | 37.8 | 98 | 52.1 | 16 | 8.5 | 3 | 1.6 |
| 8. | I think ESS provide better teaching/learning experiences. | 70 | 37.2 | 101 | 53.7 | 11 | 5.9 | 6 | 3.2 |
| 9. | I seek out ideas about instructional use of ESS always. | 70 | 37.0 | 96 | 50.8 | 15 | 7.9 | 8 | 4.2 |
| 10. | I think the future of library education is dependent on ESS' use. | 60 | 32.3 | 99 | 53.2 | 21 | 11.3 | 6 | 3.2 |
| 11. | Using ESS reduces my instructional productivity. | 50 | 26.6 | 88 | 46.8 | 42 | 22.3 | 8 | 4.3 |
| 12. | I don't feel I can find more & better resources for my lessons using ESS. | 44 | 23.7 | 10 | 5.4 | 55 | 29.6 | 77 | 41.4 |
| 13. | Using ESS for teaching is too cumbersome. | 34 | 18.1 | 73 | 38.8 | 47 | 25.0 | 34 | 18.1 |
| 14. | I feel nervous and uncomfortable while using ESS for teaching. | 24 | 12.9 | 41 | 22.0 | 82 | 44.1 | 39 | 21.0 |
| 15. | Using ESS for teaching is too time consuming. | 50 | 26.9 | 78 | 41.9 | 38 | 20.4 | 20 | 10.8 |
| 16. | I don't think that ESS is preferable for class-based instruction. | 21 | 11.2 | 46 | 24.5 | 79 | 42.0 | 42 | 22.3 |
| 17. | To me, using ESS reduces reading/writing culture and pleasure. | 37 | 19.9 | 48 | 25.8 | 79 | 42.5 | 22 | 11.8 |
| 18. | I don't think ESS is an effective teaching tool for LIS lessons. | 23 | 12.3 | 58 | 31.0 | 75 | 40.1 | 31 | 16.6 |
| 19. | I think using ESS for teaching reduces teacher-student socialization. | 25 | 13.3 | 44 | 23.4 | 71 | 37.8 | 48 | 25.5 |
| 20. | I don't use ESS for teaching often because they make me anxious. | 17 | 9.0 | 45 | 23.9 | 86 | 45.8 | 40 | 21.3 |

strongly disagreeing with a negative statement showed a positive attitude and vice-versa. For easy description, strongly agree and/or agree was taken as agreed while disagree and/or strongly disagree was taken as disagreed.

Positive attitude: A total of 178 (94.2%) of the library educators agreed that ESS makes courses more interesting while 172 (91%) of them thought that ESS are useful in disseminating course content. Another 171 (90.9%) of the educators agreed that ESS provide better teaching and learning experience while 168 (90.8%) agreed that teaching through ESS is a good idea. In addition, 171 (90%) of them agreed to the fact that time spent in using ESS for teaching is worthwhile with another 169 (89.9%) agreed to being aware of the opportunities the use of ESS offers. Furthermore, the result also revealed that 166 (87.8%) of the educators always seek out ideas about instructional use of ESS while 159 (85.5%) of them thought that the future of library education is dependent on the use of ESS for teaching.

It was further revealed that 154 (81.9%) of the educators agreed that it was necessary for them to use ESS for library science lectures and a total of 141 (74.6%) of them agreed that what ESS stands for is important to them as educators. Additionally, 132 (71%) of the educators disagreed that they may not find more and better resources for their lessons using ESS while 126 (67.1%) disagreed that the use of ESS for teaching produce anxiety.

Negative attitude: A total of 138 (73.4%) of the educators agreed that using ESS may reduce their instructional productivity while 128 (68.8%) of the educators agreed that the use of ESS for teaching is too time consuming. Additional 107 (56.9%) agreed that using ESS for teaching is too cumbersome while a total of 101 (54.3%) agreed that using ESS reduces reading/writing culture and pleasure.

Overall, the result shows a dominance of positive responses over negative responses, that is, out of 20 items in the attitude scale administered, only four

were found to be negative. This implied that the attitude of the library educators towards the use of ESS for teaching was positive, that is, the library educators were favorably disposed to the use of ESS for teaching.

## Hypothesis testing

One null hypothesis was tested in the study at 0.05 level of significance. The findings are presented below.

The hypothesis statement: Library educators' attitude towards the use of ESS for teaching does not significantly affect use.

In testing this hypothesis, the mean of the two levels (negative and positive) of attitude was calculated before proceeding to compute the independent *t*-test result as shown in Table 5. The result displayed in Table 5 revealed that attitude of the library educators had a significant effect on their use of ESS for teaching ($t = -4.45$; df = 152; $p = .00$). Hence, the null hypothesis was rejected.

This result implied that attitude to use significantly affected the use of ESS by the library educators for teaching. Furthermore, educators with positive attitude to use has higher mean (49.44) than those with negative attitude (mean = 38.95). It can be concluded that the attitude of the library educators was positive and this positive attitude may increase their use of ESS for teaching in universities in Nigeria.

## Discussion of findings

### *Demographic data*

Majority of the library educators that participated in this study were from the assistant lecturer to senior lecturer cadre; mainly male and in the 30–59 years age categories with the average age as 40. They were mainly Master's degree holders; between 0–15 years of teaching experience; taught at the undergraduate level; had personal computers and e-mail boxes and used their personally acquired ESS for teaching. This set of library educators were young, active, mobile, recent graduates, and educators and were, because of their status, into mainstream teaching and learning (some of them were PhD students) in the university-based library schools in Nigeria.

### *Actual use of ESS for teaching by library educators*

It was found that ESS have not been actually used for many of the instructional activities outlined in the study. The reason could be that these systems were neither available nor accessible to these educators or that their use for teaching requires technical expertise that needed to be learned by the educators. It could also be that the use of ESS by the library educators for teaching LIS courses is not required or mandated by the management of these library schools.

This finding is in agreement with earlier studies by Gülbahar (2007) and Peeraer and Petegem (2011) who found some educators who feel they are competent in using educational technology available in the school but are not integrating it into the classroom or using it for teaching. Though, it was found that these educators used a range of information communication technology (ICT) applications and computer for lesson preparation, but much less use in classroom teaching. Kumar et al. (2008) pointed out that many teachers actively resist using computers even though there are ample research studies that clearly show that achievement and opportunities to learn would increase with the application of technology to teaching.

Barak (2006) revealed that while educators exploit educational technologies for their own learning, they are cautious about integrating advance technologies in the classroom. Though, they recognized the potential of technology in stimulating students' learning and making school studies relevant to real-life contexts, according to him, few of them actually think that technology is preferable for class-based instruction and for promoting cooperation and reflection in learning. Research studies by Askar, Usluel, and Mumcu (2006) also confirmed that there are few educators who are described as exemplary in their use of educational technologies for instruction and learning.

However, contrary to this finding, research studies by Tella, et al. (2007), YuLi (2008), Bee Theng and Chia Hua (2008), Afshari et al. (2009), and Hennessy et al. (2010) found significant use of technology for teaching and emphasized the importance of technology use, especially in exposing educators and their students to a world of information resources. Hence, library educators who wish to deliver a current, cutting-edge, and quality instruction and "stand-out" among colleagues are advised to accept, acquire the skill, and use ESS extensively in their teaching practices.

**Table 5.** Effect of attitude on use of ESS for teaching.

| Attitude | *N* | Mean | Std. deviation | *t* | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|
| Negative | 75 | 38.95 | 14.56 | − 4.45 | 152 | 0.000* |
| Positive | 79 | 49.44 | 14.73 | | | |

* Significant ($p < .05$).

### *Attitude of library educators towards the use of ESS for teaching*

In spite of their non-use of ESS for teaching LIS courses, it is surprising to find that the attitude of the library educators towards the use of ESS for teaching was positive. This means that the educators were favorably disposed towards the use of ESS for teaching. This may be as a result of their acceptance and positive attitude to the use of ICTs generally. This finding is in line with the findings of the surveys of Bee Theng and Chia Hua (2008), Drent and Meelissen (2008), and Cavas et al. (2009), which found that teachers who successfully made use of technology had a positive rather than negative attitude towards technology. They concluded that teachers who have positive attitude towards technology will be positively disposed towards using it in the classroom to enhance teaching and learning.

All of the empirical studies on attitude reviewed by the researcher unianimously agreed that any successful transformation in educational practice requires the development of positive user attitude towards new technology. Hence, library educators' positive attitude to the use of ESS for teaching in this study is a good signal and a welcome development. This is because the development of educators' positive attitudes toward ESS is a very significant factor not only for implementing and increasing integration but also for avoiding educators' resistance to ESs' use.

### *Effect of attitude on the use of ESS by library educators for teaching*

The findings revealed that attitude of the library educators had a significant effect on their use of ESS for teaching ($t = -4.45$; df = 152; $p < .05$). Therefore, the null hypothesis was rejected. This means that the use of ESS for teaching may be affected by the attitude of library educators. This is in line with the research model. It implied that library educators' positive attitude to the use of ESS may lead to an increase use for teaching at the university-based library schools in Nigeria. This is because with positive attitude comes the willingness and readiness to use and consequently the actual use of ESS. Sustaining educators' positive attitude is, therefore, a requisite to full integration and implementation of ESS for teaching. Hence, any educational policy maker aspiring to foster an increase use of ESS for teaching may need to encourage and sustain educators' positive attitude towards their use.

This result confirmed the findings of other researchers that identified an apparent dominance of attitude with regard to technology use and successful integration into the classroom and the impact of attitude in predicting ESS use. For instance, the study of Hermans et al. (2008) from Flanders (the Dutch-speaking area of Belgium) on the effect of teachers' computer attitude on the classroom use of computers showed attitude having a significant effect on classroom use of computer. In further support of this finding, Mueller et al. (2008) found attitude towards computer technology as an instructional tool a critical contributor that distinguished successful from less successful integrators.

The strongest predictor of whether or not teachers in the northern part of West Virginia, USA would incorporate technology-rich instructional strategies into their classrooms as found by Palak and Walls (2009) is their attitude towards technology. To confirm further the effect of attitude on use of technology, Lee et al. (2010) examined Korean educators' intention to integrate technology in their teaching and found that a positive attitude may lead to an educator actually using technology just as it was found by this study. On the weight of effect, Drent and Meelissen (2008) found that attitude towards technology has the most significant effect on technology use by educators in Netherlands when compared with other factors, such as management level support and/or school level factors.

While the original Technology Acceptance Model of Davis (1986, 1989) hypothesized that attitude of a system user will affect indirectly the user's actual use with intention mediating, the research model proposed a direct effect of the attitude of library educators on the use of ESS, assuming intention is subsumed in actual use. This implied that the library educators' positive

attitude towards the use of ESS for teaching may result in an increased use. This hypothesis was confirmed by this study.

## Summary, conclusion, and recommendations

The study found that the library educators were not actually using ESS for teaching LIS courses in university-based library schools in Nigeria; though, surprisingly, their attitude to the use of ESS for teaching was positive. However, it was found that the educators' attitude may significantly affect their use of ESS for teaching. In the light of these findings, it was concluded that the library educators' non-use of ESS for teaching could be as a result of the fact that the use of these systems may require technical expertise that needed to be learned by the educators. Furthermore, their favorable disposition towards the use of ESS for teaching may be an expression of their willingness to use ESS and/or a split-over effect from their positive attitude towards the general use of ICT tools for research, personal correspondence, administrative, and recreational purposes. With the positive attitude, however, an increase use of ESS for teaching is possible.

Moreover, the positive attitude of the library educators to the use of ESS for teaching, an attitude which can engender increased use, could mean acceptance and readiness for the introduction, implementation, development, and full integration of ESS-based instruction, hence, it can be said that these educators are "ripe" for this instructional innovation. The implication of this to the administrators in these universities is to rise and take up the challenge of introducing, developing, and fully integrating ESS for teaching LIS courses in their library schools. The full integration of ESS into teaching could facilitate increased use among the educators, leading to quality and effective teaching, better working and learning environment and richer experiences for LIS students.

In the light of the findings, therefore, the following recommendations were proffered:

1. Knowing how to use ESS for teaching and actually using these systems for teaching is very important for educators who may wish to excel as teacher cum researcher in this information society. Hence, the onus lies on the library schools to use and expose their educators to a wider range of these modern systems which are becoming more useful in today's educational world. A lot of advocacy may be required in repositioning the library schools in this information age and, until the schools are fully equipped with relevant ESS, their heads need to be on the lookout for any good ESS in the market and purchase them.
2. Library educators must be part of the decision making process with respect to the implementation of ESS innovations in the library schools, so that they may be committed, retain their present positive attitude, and hence, sustain use, instead of being commanded to use systems that appear "out of the blue."
3. Providing the educators with computers already installed with software for home-use may help in making the use of ESS a more widespread and effective teaching practice. The familiarity afforded by this approach may lead to more positive attitude and consequently, use of ESS. Computer home-use will enable their seeing possibilities under a relaxed home environment, as against school environment where they are always feeling rushed.
4. University management should support and possibly sponsor library educators' study visits or secondments to other LIS departments in other universities within and outside the country where ESS have been integrated into teaching to widen their horizon and enable cross fertilization of ideas and collaboration in instructional activities and research.
5. Future researchers could consider investigating students' acceptance, attitude and digital literacy as correlates of educators' use of ESS for teaching in universities in Nigeria. In addition, an evaluation of the effect of educators' use of ESS for teaching on students' achievements in LIS courses in universities in Nigeria could be carried out.

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