PRACTICES REQUIRED BY AGRICULTURAL EDUCATION LECTURERS IN THE DEVELOPMENT AND UTILIZATION OF POWERPOINT FOR QUALITY INSTRUCTION IN SOUTH-EAST NIGERIAN UNIVERSITIES.

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ABSTRACT

This study identified practices required by Agricultural Education lecturers in the development and utilization of PowerPoint for quality instruction in South-East Nigerian universities. Two specific objectives were posed to guide the study with corresponding research questions and hypotheses. A survey research design was suitably adopted for the study. The target population for the study was 56 lecturers of Agricultural Education in 6 public universities offering Agricultural education in South-East Nigeria. Census was used for the study. A researcher-developed structured questionnaire validated by 3 experts was used as an instrument for data collection. The reliability of the instrument was determined at an index of .86 using Cronbach's Alpha Coefficient test. Data collected for the study were analyzed using descriptive statistics such as Mean to answer research questions and standard deviation to show degree of responses. Independent Sample t-test was used to test the 2 stated hypotheses at .05-level of significance. The study found that lecturers of Agricultural Education require 17-practices in the development of PowerPoint and 10-practices in the utilization of PowerPoint for quality instruction South-East Nigerian universities. Therefore, the study concluded that there are 17-practices on PowerPoint development and 10-practices on PowerPoint utilization for quality instruction in South-East Nigerian universities. It was recommended by the study that Agricultural education lecturers should adopt these practices identified by the study for quality instruction in South-East Nigerian universities.

KEYWORDS: Instruction, PowerPoint, PowerPoint development practices, PowerPoint utilization practices, TPACK

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INTRODUCTION

There is no gainsaying that the emergence of Information and Communication Technology (ICT) has improved the quality of instructions in universities across Nigeria. As a result, Segun, Ajisola, Adeyinka and Enijuni (2013) pointed out the need in changing pedal from the traditional methods of instruction in Nigeria to the modern ways which are in line with practices in the developed parts of the world. Notably, instruction involves a systematic information transmission and its goal is to convey information in such a way that allows students to remember what has been taught (Jason, 2013). Globally, the adoption of ICT for quality instructions in universities is becoming an indispensable part of educational technology as their applications enhance and facilitate lecturers' pedagogical activities and students' interest in learning (Yusuf, 2005). In agreement, Segun *et. al*., (2013) explained that the emergence of ICT has greatly changed the traditional pattern of instruction in the classroom to the use of computers and computer applications. Ololube, Eke, Uzorka, Ekpenyong and Nte (2009) noted that ICT enhances educational efficiency in general and also that the efficiency of teaching in Nigerian Universities stands to be improved. This implies also that the use of ICT can enhance the quality of instructions in universities. Babalola and Tiamiyu (2012) reported that many universities in Nigeria are already teaching large classes of students using ICT, thus, Segun *et. al* (2013) suggested that with enhanced ICT capabilities, it would be possible for lecturers in universities to utilize carefully prepared ICT program or software such as PowerPoint as an effective instructional technology to ensure that learners are more accurately and systematically instructed.

PowerPoint has been recognized as one of the ICT programmes that is commonly used by lecturers in South-east Nigerian universities for instruction. In agreement Allan (2003) posited that PowerPoint is a widely used presentation programme that originated in the world of business but has now become prevalent in educational technology. PowerPoint refers specifically to a Microsoft Office Programme which enables users to create slide based presentations and can be used as a tool for lecturers in universities to create visually content rich presentations with multimedia for quality instruction (Real, 2014). It has become part of many instructional settings, particularly in large classes and in subject matters more geared towards information exchange than skill development (Smith, 2012), though the use of it for instruction is likened to Computer Aided Instruction (CAI) (Segun *et. al*., 2013).

PowerPoint is commonly used in South-east Nigerian universities for instructional purposes during lectures, workshops and seminars. In addition, Real (2014) explained that lecturers can use it for the following instructional purposes; preparation of notes and lessons for systematic instruction, inclusion of images, daily instruction routines, classroom or student showcase, videos and multimedia presentations, inclusion of graphics and chats, and audio. In the view of Melissa (2013), the use of PowerPoint enhances instruction and learning and breaks out topics into understandable points. Similarly, Allan (2003) opined that the purpose of using PowerPoint presentation is to enhance teaching and learning. Smith (2012) stated that it can be used to improve audience focus, engage multiple learning styles, synthesize complex subject matters and increase visual impact among others. In Segun *et. al.* (2013), the use of PowerPoint enhances lecturer's oral

presentation and keeps students focused on the subject matter being taught. The importance of the use of PowerPoint slides for quality instruction cannot be overemphasized; hence practices on its development and utilization by lecturers of agricultural education for quality instruction in universities in South-east Nigerian should be given serious attention.

PowerPoint development practices by lecturers of agricultural education for quality instruction entails the activities required by the lecturers in developing lessons on PowerPoint for quality instruction of students, especially on subject matters geared towards information exchange than skill development in Agriculture (Smith, 2012). More so, Isseks (2011) suggested that in developing PowerPoint for instructions, bullet points should be removed; lecturers should not waste time on fancy transitions and sound effects. This could be to avoid unnecessary distractions which will defeat the goals of instruction. In the view of Penciner (2013), the lecturer should create three documents which include speaker notes, a handout and slides. The implication is that it reduces much information on the slide during instruction or presentation. Also, at the end of instructions lecturers should give out detailed handouts of lessons taught. Penciner (2013) suggested the following PowerPoint development practices which could be adopted by lecturers in South-east Nigerian universities for quality instructions; use of narration and relevant images; usually narration and images are better than narration and text; consider not to use bullets; limit the information on the slide; and use interesting multimedia presentations but avoid excess use of multimedia. Real (2014) equally noted that lecturers should create visuals on the slides that go along with what is being presented and effective presentations should not have a lot of text, nor should they have flashing text and other annoyances. When creating presentations, lecturers should also be aware of the need to keep notes concise while including interesting and relevant images, if properly carried out; it will be interesting and effective for learning (Collette, 2019). Development of good PowerPoint slides for instruction facilitates its effective utilization for quality instruction, therefore it should be noted that poorly developed PowerPoint affects instruction negatively.

Utilization of PowerPoint for instructions in the context of the study can be conceptualized to mean the effective use of carefully developed PowerPoint slides for systematic instruction in universities by lecturers of agricultural education. In using PowerPoint for instruction, Collette (2019) suggested that lecturers may want to follow the 10/20/30 rule which means that slides should not be more than 10, presentation is done under 20 minutes and the font is not smaller than 30 points. Also, the author noted that lecturers should be aware that too many words on the slides can be confusing to some students or that reading every word aloud on the slide can be boring for students that can already read materials. Brill (2019) is of the opinion that PowerPoint can be utilized to create dynamic, student-centred and hands-on-learning activities. This implies that the use of PowerPoint is not just for passive instruction but could be employed to deliver student-centred instruction. In agreement to Brill's opinion, Segun *et.al*. (2013) asserted that it enables the teacher to prepare his lesson's topic into slides accordingly and present such in the classroom in an interactive manner with the learners using computer system and a slide projector. Penciner (2013) suggested that while using PowerPoint for instruction, lecturers should ensure not to read slides and direct learners' attention to important passages and events. Hence this study sought to identify practices required by lecturers of

Agricultural Education in the development and utilization of PowerPoint for quality instruction in South-East Nigerian universities.

Statement of the problem

Indisputably, the emergence of ICT has improved the quality of instruction in institutions across Nigeria. PowerPoint is one of the ICT-applications that are commonly used by lecturers for instructions in universities. Unfortunately, a high percentage of the lecturers were trained before the advent of this application making it difficult for them to gain from the benefits of PowerPoint and enhance teaching in universities. Notably, some of the mistakes some ICT-literate lecturers make in the development and use of PowerPoint for instruction in universities include its limited use to an information transmission mode and often with excessive content. Also, some lecturers are reluctant to invest their time to developing appropriate PowerPoint format for instruction, those who do may not do it in an acceptable way, shortage of key technological elements required such as computers and projectors, and lack of appropriate training in technology and programme among others affect the development and utilization of PowerPoint for instruction (Allan, 2003).In agreement, the researchers observed that poor development and usage of PowerPoint for instruction, excessive contents in developed PowerPoint slides and lack of technological competences are some of the challenges affecting the development and use of PowerPoint for instruction by lecturers in universities in South-East Nigeria. These problems would likely affect the quality of instructional delivery in the universities and impede lecturers from measuring up to the global standard of developing and utilizing PowerPoint for quality instructions. Therefore, there is need to improve the practices of lecturers on the development and utilization of PowerPoint for quality instruction in universities in South-East Nigeria. However, there are little or no empirical studies on the practices required for the development and utilization of PowerPoint for quality instructions by lecturers of agricultural education in South-east Nigeria. Hence, the study seeks to identify practices required by Agricultural Education lecturers in the development and utilization of PowerPoint for quality instruction in South-East Nigerian universities

Purpose of the study

The purpose of the study is to identify practices required by Agricultural Education lecturers in the development and utilization of PowerPoint for quality instruction in South-East Nigerian universities. Specifically, the study sought to identify:

1. practices required by Agricultural Education lecturers in the development of PowerPoint for quality instruction in South-East Nigerian universities; and
2. practices required by Agricultural Education lecturers in the utilization of PowerPoint for quality instruction in South-East Nigerian universities.

Research questions

The following research questions were raised and answered for the study.

1. What practices are required by Agricultural Education lecturers in the development of PowerPoint for quality instruction in South-East Nigerian universities?

2. What are the practices required by Agricultural Education lecturers in the utilization of PowerPoint for quality instruction South-East Nigerian universities?

Hypotheses

The following hypotheses were formulated for the study and tested at .05-level of significance

H_{o1}: There is no significant difference between the mean responses of male and female Agricultural education lecturers on practices required in the development of PowerPoint for quality instruction in South-East Nigerian universities.

H_{o2}: There is no significant difference between the mean responses of male and female Agricultural education lecturers on practices required in the utilization of PowerPoint for quality instruction in South-East Nigeria universities.

Theoretical framework

The study is anchored on Technological-Pedagogical-Content Knowledge framework. This framework was propounded by Mishra and Koehler in 2006. The framework as elaborated by Luhamya, Bakkabulindi and Muyinda, (2017) is suitably adapted by the researchers to support this study. The central underlying tenet of the framework (TPACK) is that a lecturer depends on three domains of knowledge for effective integration of ICT into teaching and learning. These domains and their interactions are represented in the diagram below by Luhamya, Bakkabulindi and Muyinda, (2017).

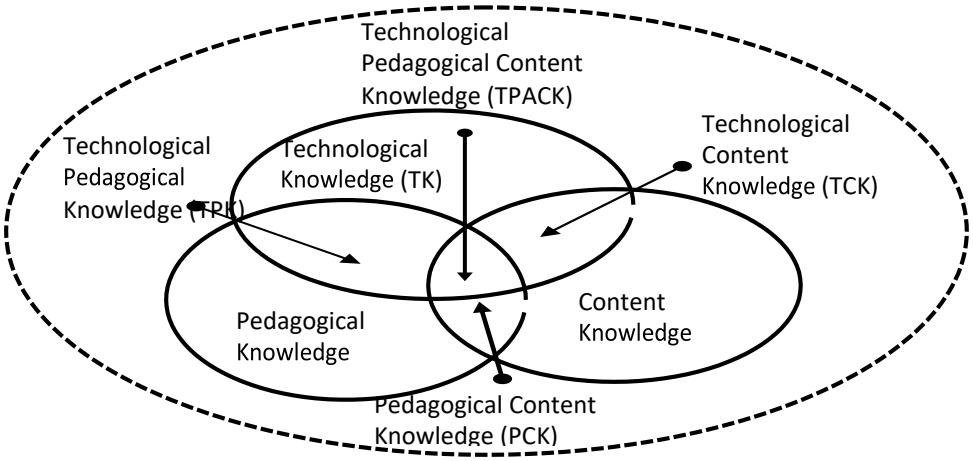

Figure 1*:* TPACK Framework by Mishra and Koehler (2006). ***Source:*** Luhamya, Bakkabulindi & Muyinda, (2017), pg-3

The domains of knowledge on which lecturers depend on for effective integration of ICT into teaching and learning include content knowledge (CK), pedagogical knowledge (PK) and technological knowledge (TK) (Luhamya, Bakkabulindi & Muyinda, 2017).These domains of knowledge are interdependent, that is to say, they interact with one another. CK refers to knowledge about the actual subject matter that is to be learned or taught. The implication of this domain is that lecturer's knowledge to the subject matter taught in agricultural education would assist them in selecting subject matters to be taught using PowerPoint. In addition, PK is viewed as the in-depth knowledge about the techniques of teaching and learning. This may include values, aims, classroom management, lesson planning, and student evaluation. The theorists posited that a lecturer with deep PK is likely to integrate technology in teaching while considering the best way students can learn in the classroom situation and also taking cognizance of the nature of learners. Hence, if agricultural education lecturers have deep pedagogical knowledge they will be able to develop and use PowerPoint for quality instruction in Nigerian Universities. TK has to do with the knowledge about standard technologies, such as books, chalkboard, and more advanced technologies such as the Internet and digital video, and how to operate those technologies. Mishra and Koehler (2006) asserted that a lecturer with TK has good knowledge of operating system and computer hardware, the ability to use standard sets of software tools (e.g. PowerPoint, word processors, spreadsheets, browsers, e-mail) and how to install and remove peripheral devices, install and remove programmes, create and archive documents among others. This implies that Agricultural Education lecturers with good TK can effectively integrate PowerPoint for quality instructions in South-East Nigerian universities.

More so, Mishra and Koehler (2006) posited that the interplay of these three knowledge domains; CK, PK and TK gives rise to three paired knowledge domains namely pedagogical content knowledge (PCK), technological content knowledge (TCK) and technological pedagogical knowledge (TPK). Mishra and Kohler defined PCK as the knowledge of pedagogy that is applicable to the teaching of specific content such as knowing what teaching approaches fit content, and likewise, knowing how elements of the content can be arranged for better teaching. Mishra and Koehler defined TCK as the knowledge about the manner in which technology and content are reciprocally related. The authors further asserted that a lecturer needs to know not just the subject matter he/ she teaches but also the manner in which the subject matter can be changed by the application of technology. Mishra and Kohler (2006) defined TPK as knowledge of the existence, components and capabilities of various technologies as they are used in teaching and learning settings and conversely, knowing how teaching might change as the result of using particular technology. According to the diagram shown above (*Figure 1)*, TPACK is the intersection of all the three bodies of knowledge (CK, PK & TK). Mishra and Kohler argued that the development of TPACK by lecturers is central for effective teaching with technology because understanding. TPACK is above and beyond understanding technology, content, or pedagogy in isolation, but rather how these forms of knowledge interact with each other for effective integration of ICT into teaching and learning (Luhamya, Bakkabulindi & Muyinda, 2017). This implies that the development of TPACK by lecturers of agricultural education will assist them to effectively integrate PowerPoint into teaching in Universities. Hence, agricultural education lecturers need to improve their practices on the development and utilization of PowerPoint for quality instructions in South-East Nigerian universities.

REVIEW OF EMPIRICAL STUDIES

Past and recent studies have focused more on the advantages and disadvantages of PowerPoint utilization in education. PowerPoint is undoubtedly a veritable instrument which enhances delivery of lectures in Universities. Its limitation in educational technology is that it depends on the nature of subject matter to be delivered and secondly, the lecturer's technological competence (Szabo & Hastings, 2000; Lowry, 2003; Jones, 2006; Babb & Ross, 2009; Vernadakis, et. al., 2011). However, researchers have devoted more time in studying the roles, impacts, or effects of the utilization of PowerPoint presentation on education when compared to traditional teaching methods (Chalk or Whiteboard method). The utilization of PowerPoint has been found to enhance teaching and learning. It enhances material understandability, academic achievement and retention of students among others (Brock & Joglekar, 2011; Erdemir, 2011; Sabra & Yogin, 2011; Rajabi & Ketabi, 2012; Ozaslan & Maden, 2013; Swati, Suresh, & Sachin, 2014; Alipanahi; 2014; Amosa, Hamdalat and Sherifat, n.d ;). Meo *et al*. (2013) argued that both PowerPoint and the chalkboard have strengths and limitations, and both have pedagogical value in teaching and learning. Therefore, methods of teaching that integrate the two are more effective.

Specifically, Erdemir (2011) carried out a study to investigate the effect of the use of PowerPoint presentation on student's achievement when compared to the traditional lecture method. The post-test results of this study revealed that the students who were exposed to PowerPoint Presentation-supported lectures were more successful than those in traditional lectures after the instruction. More so, findings of the study showed that the use of PowerPoint is not only for conveying declarative subject matters but could also improve students' understanding of more complex ideas that are presented during instructions. Thus, Erdemir (2011) concluded that the teaching method supported by PowerPoint presentations had a positive impact on the student teachers' achievement. Sabra and Yogini (2011) examined the possible relationship of the use of PowerPoint slides and teaching effectiveness. The findings of the study revealed that the use of presentation software such as PowerPoint varies depending on instructors' teaching styles. The connection between the number of PowerPoint slides used in class and perceived teaching effectiveness is not shown to be very robust, rather the character and use of slides is the main focus in student feedback. The suggested rule of thumb is no more than three bullet points or 20 words per slide. The researchers concluded that developing more visual slides is important as it's using PowerPoint to structure argument and to develop concepts that cannot be easily captured in words. Rajabi and Ketabi (2012) studied the effect of PowerPoint presentation on enhancing learners` application of cohesive devices to their academic writing. The findings of this study clearly revealed the role of PowerPoint in developing productive language skills namely speaking and writing. Ozaslan and Maden (2013) concluded that course material presented through some visual tools such as PowerPoint, results in better learning and higher interest in the course. The researchers laid emphasis that using PowerPoint presentations made the content more appealing and attracted students' attention more. Alipanahi (2014) investigated the impact of PowerPoint presentation on vocabulary knowledge and reading comprehension ability of EFL high school learners. The results of the study showed the success of PowerPoint in both cases.

In contrast, Daniel, Missaye and Gebeyehu (2015) carried out a comparative study on the PowerPoint presentation and traditional lecture method in material understandability, effectiveness and attitude. The purpose of this study was to examine the possible relationship of the use of PowerPoint slides and effective teaching. The findings of the study revealed that lecture method had more positive impact on students' material understandability; also it was more effective in teaching/learning process than the use of PowerPoint presentation. Researchers concluded that though the result of this study is discouraging to the use of technology in education it is not safe to conclude and generalize, hence the intelligent use of technology is needed during instructions to improve students' academic achievement. Based on the review above, recent studies on the utilization of PowerPoint have bordered more on examining its effect on teaching and learning. Unfortunately, there is little or no empirical study on practices required by lecturers in developing and utilizing PowerPoint for quality instruction in universities; hence this study sought to bridge the gap.

METHODOLOGY

A survey research design was adopted for the study. This design was suitable for this study because data was collected from respondents using questionnaire with the objective of generalizing the findings on the entire population. The area of study was in South-East Nigeria. It is one of the six geopolitical zones of Nigeria with 5 member States. These member States that make up South-East Nigeria include: Abia, Anambra, Ebonyi, Enugu and Imo. The South East States have boundaries with Delta State by the West, Benue State and Cross-River State by the East, Akwa-Ibom State and River State by the South and Kogi State by the North. The choice of the area was borne out of the fact that there are 6 universities in South-East Nigeria that offer agricultural education programme with lecturers that could help to generate data for the study. Also, it was in this area that the researchers identified the problem for the study. The target population of the study was 56 persons made up of 34 male and 22 female lecturers of Agricultural Education in 6 public universities in South-East Nigeria. The study used universe or census; hence there was no sampling. This is because the entire population of study was manageable by the researcher.

A researcher-developed structured questionnaire titled: "PowerPoint Development and Utilization Practices Questionnaire" (PDUPQ) was used as an instrument for data collection. This instrument was adapted by the researcher from review of related literatures (Brill, 2019; Collette, 2019; Penciner, 2013; Real, 2014; Segun *et.al*. 2013; Smith, 2012). The PDUPQ was structured on four point scale of Agreed, Strongly Agreed, Disagreed and Strongly Disagreed with corresponding values of 4, 3, 2, and 1 respectively. The questionnaire consisted 27 items and was grouped into 2 sections. The first section comprised the status of respondents (Male and Female). The second section comprised 2-clusters, Cluster-A comprised 17 items on practices required by lecturers of Agricultural Education in development of PowerPoint for quality instructions while cluster-B contained 10 items on practices required by lecturers of Agricultural Education in utilization of PowerPoint for quality instruction.

The instrument was validated by 3 experts, one Computer Educationist from the Department of Science Education, one Agricultural Educationist from the Department of Agricultural and Home Science Education and one Computer technologist from the Department of Computer Science, all in Michael Okpara University of Agriculture, Umudike, Abia State. Some items were reconstructed to elicit desired information from respondents based on the suggestions of experts after face validation. A pilot study was carried out with 10 lecturers of Agricultural education in Akwa Ibom with the aid of a research assistant and the internal consistency of PDUPQ was determined at an acceptable reliability index of .86 using Cronbach's Alpha Coefficient test. The director of Research and Ethics in each of the South-East Nigerian public universities granted ethical clearance and approval through the Head of Departments of Agricultural Education to use agricultural education lecturers as participants in the study. Researchers sought the consent of respondents and their participation in the study was entirely voluntary. Therefore, fifty six copies of the PDUPQ were successfully administered by researchers to the respondents with the help of 5 research assistants in 5 South-East Nigerian public universities. Administered copies of the questionnaire were successfully retrieved from respondents.

Data collected for the study were confidentially analyzed using descriptive statistics such as mean and standard deviation. Mean was used to answer the research questions while standard deviation was used to determine degree of responses. Independent Sample test was used to test the 2 stated hypotheses at 0.05-level of significance. The following rules guided decisions reached in the study: questionnaire items with mean scores ≥ 2.50 on 4-point scale were described as "Agreed" while mean scores < 2.50 average on 4-point scale were described as "Disagreed". In testing the hypotheses, *t-cal.* values less than ± 1.96 were taken as not significant (NS). Data collected for the study were organized using EXCEL and analyzed using SPSS -version 22 by the researchers.

FINDINGS AND DISCUSSION

The results of the study and discussion are presented in the Tables below.

Research Question 1: What practices are required by Agricultural Education lecturers in the development of PowerPoint for quality instruction in South-East Nigerian universities?
The results for research question 1 are presented in Table 1 below.

Table 1: *Descriptive Statistics of respondents on practices required by Agricultural Education lecturers in development of PowerPoint for quality instructions in South-East Nigerian universities (N = 56)*

S/N	Item Statement	μ	σ	Remark
1	Create three documents for a particular lecture (instruction notes, a handout and PowerPoint slides for instruction)	3.20	.829	A
2	Notes on slides should be concise	3.04	.602	A
3	Avoiding bullet points on slides	3.23	.952	A
4	Use narration format in developing instructions	3.02	.724	A
5	Use suitable images instead of text to backup narration	3.32	.777	A
6	Avoid fanciful transitions of slides	3.03	.577	A
7	Avoid fanciful and excessive sounds	3.51	.732	A
8	Use 20/60/30 rule (slides should not be more than 20, presentation is done under 60 minutes and the font is not smaller than 30 points)	2.61	.598	A
9	Create student-centred activities on slides	3.03	.594	A
10	Insert short Videos where necessary to buttress narration	3.23	.548	A
11	Avoid colour riots on slides	3.46	.642	A
12	Use moderate attractive colour on slides	3.33	.533	A
13	Instructions on PowerPoint should have beginning, middle and end	3.38	.488	A
14	Key words should be noted on slides	3.25	.592	A
15	Ensure using the right font type that will be clear to the students	3.52	.502	A
16	Use a good font size in adding texts to the slides	3.08	.580	A
17	Frameworks explaining notes on PowerPoint should be developed	3.20	.672	A

μ= population mean, σ = standard deviation for population. A= Agreed, D= Disagree, N = Population of study,

Data in Table 1 reveal that mean responses of respondents in all the 17 items range from 2.61 to 3.52 which are above 2.50 on 4-point scale. This indicated that respondents agreed to the information represented by the 17 items as practices required by Agricultural Education lecturers in development of PowerPoint for quality instructions in South-East Nigerian universities. Standard deviations of the 17 items range from .488 to .952; this shows that their responses were close to the mean and to one another in degrees of responses.

Hypothesis 1: There is no significant difference between the mean responses of male and female Agricultural education lecturers on practices required in the development of PowerPoint for quality instruction in South-East Nigerian universities.

The results for testing hypothesis 1 are presented in Table 2 below.

Table 2: *Independent Sample Test of respondents on practices required by Agricultural Education lecturers in development of PowerPoint for quality instructions in South-East Nigerian universities*

Respondents	N	$\bar{X}$	Std. Deviation	df	*t*-cal.	*t*-critical	Sig.(2-tailed)	Decision
Male	34	54 .11	.385	54	.051	±1.96	.420	**Accept H_0**
Female	22	53.99	.434					

$\bar{X}$ = Mean, N = number of respondents, df = Degree of freedom, Sig. (2-tailed) = corresponding p-value, t-cal. is significant at ≥ ± 1.96 (t-critical.)

Data in Table 2 indicate that the *t-cal. value* from independent sample t-test of the mean responses of respondents is .051 which is less than ±1.96. This means that there was no significant difference between the mean responses of male and female lecturers of Agricultural education on practices required in the development of PowerPoint for quality instruction in Universities in South-East Nigeria. Therefore, there is no significant difference between the mean responses of male and female Agricultural education lecturers on practices required in the development of PowerPoint for quality instruction in South-East Nigerian universities is not rejected in this study.

Research Question 2: What practices are required by Agricultural Education lecturers in the utilization of PowerPoint for quality instruction in South-East Nigerian universities?

The results for research question 2 are presented in Table 3 below.

Table 3: *Descriptive Statistics of respondents on practices required by Agricultural Education lecturers in utilization of PowerPoint for quality instructions in South-East Nigerian universities (N = 56)*

S/N	Item Statement	*μ*	*σ*	Remark
1	Instruct students in a conversational manner following the PowerPoint slides and instruction note	3.16	.059	A, NS
2	Ensure the use of remote control to transit from one slide to the other	2.56	.671	A, NS
3	Instruction on PowerPoint should be procedural	2.54	.662	A, NS
4	Avoid reading notes on slides	2.68	.000	A, NS
5	Direct students' attention to important passages where necessary	3.04	.618	A, NS
6	Instruction on PowerPoint should be interactive	3.22	.680	A, NS
7	Avoid using PowerPoint for instruction in the dark	3.08	.613	A, NS
8	Guide presentation on PowerPoint with the instruction note	3.35	.545	A, NS
9	Rehearse before using PowerPoint for instruction	3.03	.479	A, NS
10	Give students detailed handout in line with PowerPoint instruction	3.22	.521	A, NS

μ = population mean, σ = standard deviation for population. A= Agreed, D= Disagreed, N = Population of study

Data in Table 3 show that mean responses of respondents recorded in all the 10 items range from 2.54 to 3.35 which are above 2.50 on 4-point scale. This indicated that respondents agreed to the information represented by the 10 items as practices required by Agricultural Education lecturers in utilization of PowerPoint for quality instructions in South-East Nigerian universities. Also, standard deviations of the 10 items range from .000 to .680; this implies that their responses were close to the mean and to one another in degrees of responses.

Hypothesis 2: There is no significant difference between the mean responses of male and female Agricultural education lecturers on practices required in the utilization of PowerPoint for quality instruction in South-East Nigerian universities. The results for testing hypothesis 2 are presented in Table 4 below.

Table 4: *Independent Sample Test of respondents on practices required by Agricultural Education lecturers in utilization of PowerPoint for quality instructions in South-East Nigerian universities (N = 56)*

Respondents	N	$\bar{X}$	Std. Deviation	df	*t*-cal.	*t*-critical	Sig.(2-tailed)	Decision
Male	34	29 .70	.530	54	.068	±1.96	.601	**Accept H_0**
Female	22	30.02	.629					

$\bar{X}$ = Mean, N = number of respondents, df = Degree of freedom, Sig. (2-tailed) = corresponding p-value, t-cal. is significant at ≥ ± 1.96 (t-critical.)

Data in Table 4 show that the *t-cal. value* from independent sample t- test of the mean responses of respondents is .068 which is less than ±1.96. This indicates that there was no significant difference between the mean responses of male and female Agricultural education lecturers on practices required in the utilization of PowerPoint for quality instruction in South-East Nigerian universities. Therefore, there is no significant difference between the mean responses of male and female Agricultural education lecturers on practices required in the utilization of PowerPoint for quality instruction in South-East Nigerian universities is not rejected in this study.

DISCUSSION

The study found that respondents agreed to the 17 items as practices required by Agricultural Education lecturers in the development of PowerPoint for quality instruction South-East Nigerian universities. On the other hand, respondents agreed to the 10 items as practices required by Agricultural Education lecturers in the utilization of PowerPoint for quality instructions in South-East Nigerian universities. The study also found that there was no significant difference between the mean responses of male and female Agricultural education lecturers on practices required in the development and utilization of PowerPoint for quality instruction in South-East Nigerian universities. Specifically, the study also found that practices required by Agricultural Education lecturers in the development of PowerPoint for quality instruction in South-East Nigerian universities included creating three documents; the instruction note, the handout and the PowerPoint slide, having concise note on slides, avoiding bullet points, using narrations and suitable images, avoiding fanciful transitions and excessive sounds, creating student-centred activities

on slides, use of short videos, avoiding colour riots, instructions should have beginning, middle and end among others. Isseks (2011) agreed to some of these practices when he stated that in developing a PowerPoint for instruction a teacher should remove bullet points, avoid fanciful transition of slides and sound effects. In agreement, Penciner (2013) shared one of the opinions of Isseks when he suggested that teachers should consider not using bullets in developing PowerPoint. In line with the findings of the study, Penciner (2013) further stated that teachers should create three documents, the speaker note, a handout and slide, use relevant images and narration, consider not using bullets and limiting information on slide. Collette (2019) in agreement to one of Penciner's opinion which is in line with the findings of the study advised that instructors should be aware that too many words on the slides can be confusing to some students. Brill (2019) asserted in line with the results of the study that PowerPoint can be used by teachers to create dynamic, student-centred and hands-on-learning activities.

In addition, the findings of the study on practices required by Agricultural Education lecturers in the use of PowerPoint for quality instruction in South-East Nigerian universities included instructing students in a conversational manner following the PowerPoint slides and instruction note, ensuring the use of remote control to transit from one slide to the other, instruction on PowerPoint should be procedural, avoiding reading on slides, directing students' attention to important passages where necessary, rehearsing before using PowerPoint for instruction, avoid using PowerPoint for instruction in the dark, instruction on PowerPoint should be interactive among others. In line with some of the findings of the study, Segun *et al.* (2013) stated that PowerPoint enables the teacher to prepare a topic and present such in the classroom in an interactive manner with the learners using computer system and a slide projector. In agreement, Collette (2019) advised that reading every word aloud on the slide aloud can be boring for an audience that can already read materials. Penciner (2013) shared this opinion when he stated that in using PowerPoint, teachers should not read words on slides. More so, the finding of the study revealed that there was no significant difference between the mean responses of male and female Agricultural education lecturers on practices required in the development and utilization of PowerPoint for quality instruction in South-East Nigerian universities. The implication of this to the study is that the responses or perceptions of both male and female agricultural education lecturers were not significantly different from each other with respect to the practices required in the development and utilization of PowerPoint for quality instruction in South-East Nigerian universities; hence the null hypothesis is not rejected.

CONCLUSION

The following conclusions were made based on the findings of the study.

- There are 17-practices required by Agricultural Education lecturers in the development of PowerPoint for quality instruction in South-East Nigerian universities. These include; creating three documents; the instruction note, the handout and the PowerPoint slide, having concise note on slides, avoiding bullet points, using narrations and suitable images, avoiding fanciful transitions and excessive sounds, creating student-centred activities on slides, use of short videos, avoiding colour riots, instructions should have beginning, middle and end among others.

- There are 10-practices required by Agricultural Education lecturers in the utilization of PowerPoint for quality instruction in South-East Nigerian universities. These include; instructing students in a conversational manner following the PowerPoint slides and instruction note, ensuring the use of remote control to transit from one slide to the other, instruction on PowerPoint should be procedural, avoiding reading on slides, directing students' attention to important passages where necessary, rehearsing before using PowerPoint for instruction, avoid using PowerPoint for instruction in the dark, instruction on PowerPoint should be interactive among others.

Recommendations

The following recommendations were made based on the conclusions of the study.

- Agricultural education lecturers should adopt the 17-practices on the development of PowerPoint identified by this study for quality instructions in South-East Nigerian Universities. Some of these practices among other include; creating three documents; the instruction note, the handout and the PowerPoint slide, having concise note on slides, avoiding bullet points, using narrations and suitable images, avoiding fanciful transitions and excessive sounds and creating student-centred activities on slides.
- Agricultural education lecturers should adopt the 10-practices on the use of PowerPoint identified by this study for quality instructions in South-East Nigerian Universities. Some of these practices among others include; instructing students in a conversational manner following the PowerPoint slides and instruction note, ensuring the use of remote control to transit from one slide to the other, instruction on PowerPoint should be procedural, avoiding reading on slides, directing students' attention to important passages where necessary, rehearsing before using PowerPoint for instruction.

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