



TECHNOLOGY-BASED INSTRUCTIONAL MANAGEMENT SKILLS REQUIRED BY BUSINESS EDUCATORS FOR EFFECTIVE IMPLEMENTATION OF BUSINESS EDUCATION CURRICULUM IN SOUTH-SOUTH, NIGERIA

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Abstract

The study examined technology-based instructional management skills required by business educators for effective implementation of business education curriculum in south-south, Nigeria. Multistage sampling technique was used in selecting 118 respondents (business educators) in universities and colleges of education from Delta and Edo states, south-south Nigeria. The instrument for data collection was a structured questionnaire, validated by three experts in business education. The reliability of the questionnaire was ascertained using Cronbach Alpha reliability method which yielded a coefficient of 0.923. Data were collected with the help of eight research assistants. Through effective monitoring technique, the entire 118 copies of the questionnaire administered were completely filled and returned representing 100% return rate. Data collected were analysed using mean and t-test statistics. The result of the study identified 11 technology-based instructional planning skills, 13 technology-based instructional implementation skills and 10 technology-based instructional evaluation skills required by business educators for effective implementation of business education curriculum in south-south. The result of the hypotheses tested showed no significant ($p < 0.05$) differences in the mean responses of business education Lecturers in Universities and Colleges of Education on technology-based instructional planning ($t\text{-cal} = 0.31$) and evaluation ($t\text{-cal} = 0.28$) skills required by business educators for effective implementation of Business Education curriculum. Though, there were significant ($p < 0.05$) differences in the mean responses of business education lecturers in universities and colleges of education on technology-based instructional implementation ($t\text{-cal} = 1.99$) skills required by business educators. Based on the findings, the study recommended the packaging of the identified technology-based instructional management skills into teachable programmes for re-training lecturers for effective curriculum implementation.

Keywords: Technology-based instruction, Business education, curriculum, implementation, Nigeria.



Introduction

Education is the transmission of knowledge by the teachers to the learners for social emancipation and overall development of the society. Business education is an aspect of education designed to bring about the requisite liberation and stimulation of the citizens for national progress. According to Osuala in Nwalado (2018), Business education is a broad area of knowledge that deals with a nation's economic system and also identifies and explains the rate of business contentment and experience that prepare individuals for effective participation as citizens, workers and consumers. Joseph (2022) described Business education as an educational programme that has to do with teaching of students the very fundamentals of business, and business concepts, as well as, business theories, including processes of the business. Similarly, Gidado and Akaeze (2014) described business education as an education for business and about business as it equips its recipients with creative skills that would make them to perform well as entrepreneurs. Apart from the entrepreneurial opportunities that can be offered by the teaching and learning of business education, Aliyu (2013) also highlighted the objectives of business education to include: preparation of students career for specialized instruction in business, developing in students' fundamental tutoring to facilitate them to assume their fiscal roles as consumers, workforce and citizens and equipping them with milieu instruction to sustain them in preparing for professional life work interest to proceed in their study.

The aims and objectives of business education cannot be achieved without a carefully developed and implemented curriculum. Adesua (2014) stated that curriculum is the total learning experience students undergo under the direction and guidance of a teacher. Alade (2006) described a curriculum as a programme of education that is prepared for definite group of learners within a time frame in order to achieve the intended learning and behavioural outcomes. Curriculum is the planning of learning opportunities intended to bring about certain changes in pupils and the assessment of the extent to which those changes have taken place. It also refers to all school subjects, these are broken down into topics to be taught per day, per week, per term or per academic session (Adesua, 2015). The speedy advancement in contemporary education has further mounted pressure on the need for integration of more technologies in the implementation of school curriculum.

Advancement in technology has been inevitable in all walks of life including education for teaching and learning. This is because, technology-based learning in the early century is transforming the way people learn and educational instruction delivered. Efforts geared toward advanced teaching and learning process with the use of technology will help education system to cope with the needs and demands of 21st Century learning (Aquino, 2019). Technology-based instruction involved the use of technologies such as a computer, Internet, iPad, Smart phones and other electronic or digital products or systems for teaching and learning. According to Marquardt and Kearsley (1999) technology-based instruction, is the learning of educational content through all forms of electronic technologies, including the internet, intranets, satellite broadcasts, audio and video tape, video and audio conferencing, internet conferencing, chat rooms, e-bulletin boards, webcasts, computer based instruction, and CD-ROM. Koller, Harvey and Magnotta (2020) stated that technology-based instruction encompasses related terms, such as online learning and web-based learning that only include learning that occurs via the Internet, and computer-based learning that is restricted to learning using computers. Bourg (2020) views technology-based instructional management as the theory and practice of using technologies for education which encompass the planning, design, development, implementation of instruction and evaluation using technologies.

Some of the numerous benefits of technology-based instructional management according to Koller, Harvey and Magnotta (2020) include: easy accessibility, training that is self-paced and matched to the learners' needs, full scalability, timely dissemination of up-to-date information and effective learning delivery. The first trend is the rapid acceleration of technological change in education and the



demand that this change places on education and workforcetraining through revolutionized use of technologies in planning, implementation and evaluation of instruction. Instructional planning is the process of determining in advance, what is to be done, including classification of learning goals, mapping out of teaching and learning programmes and determining specific methods, materials or procedures to achieve learning objectives. Aminu, et al, (2020) stated that, instructional planning and teacher performance are continuous process for identifying, evaluating and developing the work performance so that the goals and objectives of the schools can be achieved. Usman (2015) noted that instructional planning, implementation and supervision occupies a unique place in the entire education system and it becomes absolutely expedient to give it prominent attention. A well planned instruction with the use of technologies will result to successful instructional implementation. Nwakpa (2015) described instructional implementation of educational practices as means of carrying out the decisions of government's educational curriculum of teaching so as to achieve the objectives of the plan. The success of any educational curriculum cannot be achieved without evaluation of the outcome on the students in terms of academic achievement.

Evaluation is an integral part of education which cannot really be said to be transmitted without proper evaluation. Evaluation is a broad concept which involves measurement, test and value judgment (Masha, 2002). In the opinion of Mezieobi (1993), instructional evaluation is concerned with the diagnosis of interactive session in a classroom setting to determine the extent of learners' attainment of set of instructional objectives or desirable change in the learner's cognitive, affective and psychomotor behaviours. Instructional evaluation is the process of seeking, obtaining and quantifying data with a view to making value judgment about objects, events or their characteristics (Nworgu, 2003). Evaluation is therefore an integral part of education (Ndubueze, et al, 2015). According to Oghenevwe (2022), evaluation must involve different techniques of evaluation, the choice which depends on the nature of evaluation being carried out. Ndubueze, et al, (2015) stated that one may therefore say that, the process of describing individual achievements in education without assigning numerical value to it is called evaluation. In digitalized world, the attention of education stakeholders is gradually shifting towards more integration of technologies in instructional evaluation. Technology-based instructional management skills for planning, implementation and evaluation of students' achievement are still grossly lacking by most Nigerian educators, business educators inclusive. Hence, this instigated the researchers to examine technology-based instructional management skills required by business educators for effective implementation of business education curriculum.

Research Questions

The study, in line with the specific purposes of the study answered the following research questions:

1. What are technology-based instructional planning skills required by business educators for effective implementation of business education curriculum in south-south?
2. What are technology-based instructional implementation skills required by business educators for effective implementation of business education curriculum in south-south?
3. What are technology-based instructional evaluation skills required by business educators for effective implementation of business education curriculum in south-south?

Research Hypotheses

H₀₁: There is no significant difference in the mean ratings of business education lecturers in universities and colleges of education on technology-based instructional planning skills required by Business Educators for effective implementation of business education curriculum in south-south.



- H0₂:** There is no significant difference in the mean ratings of business education lecturers in universities and colleges of education on technology-based instructional implementation skills required by business educators for effective implementation of business education curriculum in south-south.
- H0₃:** There is no significant difference in the mean ratings of business education Lecturers in universities and colleges of education on technology-based instructional evaluation skills required by business educators for effective implementation of business education curriculum in south-south.

Method

The study area was south-south geopolitical zone, Nigeria. The south-south zone comprises six states which include: Akwa Ibom, Bayelsa, Cross River, Delta, Edo and Rivers States. The study answered three research questions and tested three null hypotheses at 0.05 level of significance. Survey research design was used in carrying out the study. Multistage sampling technique was used in selecting the respondents for the study. The first stage of the selection involved random sampling of two states (Delta and Edo) in south-south Nigeria. The second stage of the selection involved purposive sampling of the nine tertiary institutions (colleges of education and universities) from the two selected states. These include: (i) Delta State College of Education Warri, (ii) Delta State College of Physical and Health Education Mosogar, (iii) Federal College of Education (Tech) Asaba, (iv) Delta State University, Abraka, (v) University of Delta, Agbor, (vi) Federal College of Education (Tech), Ekiadolor, Edo State, (vii) Ambrose Alli University, Ekpoma, Edo State, (viii) University of Benin, Edo State and (ix) Edo State College of Education Igweben. At the third stage of the population, the entire 148 business education lecturers (46 are Universities lecturers and 102 are Colleges of Education lecturers).

The instrument for data collection was a structured questionnaire. Section A of the questionnaire was used to gather data on personal information of the respondents (business education lecturers). Section B of the questionnaire was made to collect data on technology-based instructional planning skills required by business educators. Section C covered data collection on technology-based instructional implementation skills required by business educators while section D was made to collect data on technology-based instructional evaluation skills required by Business Educators. The response options of questionnaire were: Highly Required (HR) = 4, Moderately Required (MR) = 3, Less Required (LR) = 2 and Not Required (NR) = 1. The questionnaire was validated by three senior lecturers in business education, from Delta State University Abraka, Federal College of Education (Tech), Asaba and Nnamdi Azikiwe University, Awka, Anambra State, All the suggestions of the experts were duly utilized to improve the final draft of the questionnaire. The reliability of the questionnaire was ascertained using Cronbach Alpha reliability method which yielded a coefficient of 0.923.

Data for the study were collected with the help of seven research assistants with one from each of the tertiary institutions across the two states. Through effective monitoring technique, the 148 copies of the questionnaire administered were filled and returned, out of the 148 administered, only 118 were adequately filled, representing 79.7% return rate. This could be affected by the strike action of the Federal tertiary institutions in the two States. The data collected were analysed using mean and standard deviation for answering the research questions while t-test statistics was used for testing the null hypotheses at 0.05 level of significance. The cut-off point for answering the research questions was obtained as 2.50. Based on the obtained cut-off point value, any item with mean value of 2.50 and above was interpreted as "Required" while those less than 2.50 were interpreted as "Not Required". The hypothesis of no significant difference was accepted when the t-calculated (t-cal) value was less than the t-critical (t-tab) value of 1.96 at 0.05 level of significance while hypothesis of no significant



difference was rejected when the t-calculated (t-cal) value was greater than the t-critical (t-tab) value of 1.96 at 0.05 level of significance

Results

Research Question One

What are technology-based instructional planning skills required by Business Educators for effective implementation of Business Education curriculum in south-south.

Table 1: Technology-based instructional planning skills required by Business Educators for effective implementation of Business Education curriculum

SN	This technology-based instructional planning skills include ability to:	\bar{X}	SD	Rmks
1	Source relevant lecture materials on the internet through the use of computers and digital vices.	3.48	0.56	Rqd
2	Use technological gargets to develop business education lesson note/lecture materials.	3.73	0.60	Rqd
3	Establish business education learning goals using technological gargets.	3.56	0.56	Rqd
4	Arrange business education instructional activities and materials using information and communication technologies (ICTs).	3.61	0.47	Rqd
5	Use technology-based approach to design short term plans for students learning in business education.	3.46	0.55	Rqd
6	Modify technology-based instruction for specific needs of the business education students.	3.69	0.60	Rqd
7	Use instructional technologies to demonstrating knowledge of the contents of business education to teach students	3.37	0.78	Rqd
8	Technologically synthesize learning instruction within and across subject matter of business education	3.42	0.62	Rqd
9	Use varieties of technology-based instructional methods for instructional planning in business education.	3.60	0.55	Rqd
10	Develop business education lecture notes into slides for projection during lecture.	3.53	0.48	Rqd
11	Prepare Zoom and other virtual classroom teaching for effective teacher-students interactions.	3.55	0.53	Rqd
Pooled Mean		3.54	0.49	Rqd

Note: \bar{X} = Mean; SD = Standard Deviation; Rqd = Required; Num. of Respondents = 118.

The result in Table 1 shows that the mean (\bar{x}) values of the 11 items ranged from 3.37 to 3.73 which are all greater than the cut-off point value of 2.50. This indicates that the 11 identified technology-based instructional planning skills are required by business educators in universities and colleges of education for effective implementation of business education curriculum in south-south, Nigeria. The standard deviation values of the 11 items in the table ranged from 0.47 to 0.78 which indicates that the responses of the respondents are close to one another and the mean.



Hypothesis One

There is no significant difference in the mean ratings of business education lecturers in universities and colleges of education on technology-based instructional planning skills required by business educators for effective implementation of business education curriculum in south-south.

Table 2: Test of Significant Difference in the Mean Ratings of Business Education Lecturers in Universities and Colleges of Education on technology-based instructional planning skills required by Business Educators for effective implementation of Business Education curriculum

Variables	N	\bar{X}	SD	DF	Std. Error	t-Cal	t-Critical	Level of Sig.	Rmks
Uni. Lecturers	42	3.56	0.57						
COE. Lecturers	76	3.52	0.63	116	0.022	0.31	1.96	0.05	NS

Note: NS = Not Significant at 0.05.

The data presented on the t-test statistics in Table 2 showed that the t-calculated (t-cal) value of 0.31 is less than the t-critical (t-tab) value of 1.96 at 116 degree of freedom. This indicates that there is no significant ($p < 0.05$) difference in the mean responses of business education lecturers in universities and colleges of education on technology-based instructional planning skills required by business educators for effective implementation of business education curriculum. Hence, the null hypothesis of no significant ($p < 0.05$) difference in the mean ratings of the responses of universities and colleges of education lecturers is accepted on hypothesis one.

Research Question Two

What are technology-based instructional implementation skills required by business educators for effective implementation of business education curriculum in south-south.

Table 3: Technology-based instructional implementation skills required by Business Educators for effective implementation of Business Education curriculum

SN	Technology-based instructional implementation skills includeability to:	\bar{X}	SD	Rmks
1	Deliver business education lecture using slide and projector to teach students.	3.61	0.75	Rqd
2	Effective deliver Zoom or virtual lecture for effective learning of business education students.	3.50	0.68	Rqd
3	Use varieties of technology-based instructional strategies to teach students.	3.53	0.54	Rqd
4	Post lecture note on the internet for students to access and read for lecture.	3.78	0.53	Rqd
5	Engaging business education students in problem solving and critical thinking instruction.	3.56	0.65	Rqd
6	Carry all students of different learning ability along during technology-based instruction.	3.44	0.58	Rqd



7	Use teaching technologies to promote self-directed reflective learning for students learning.	3.53	0.71	Rqd
8	Creating physical learning environment that actively engage the students in quality learning.	3.46	0.59	Rqd
9	Promote social interaction among the students with the use of classroom technologies during instructional delivery.	3.71	0.48	Rqd
10	Maintain standard for students' behaviour during technology-based instruction.	3.52	0.55	Rqd
11	Ensure proper arrangement of instructional technologies during business education instruction in the classroom and laboratory.	3.48	0.54	Rqd
12	Communicate learning goals to all business education students using technological means.	3.74	0.37	Rqd
13	Organise computer assisted instruction (CAI) for business education students' learning.	3.50	0.46	Rqd
Pooled Mean		3.56	0.47	Rqd

Note: \bar{X} = Mean; **SD** = Standard Deviation; **Rqd** = Required; Num. of Respondents = 118.

The result in Table 3 reveals that the mean (\bar{x}) values of the 13 items ranged from 3.44 to 3.78 which are all greater than the cut-off point value of 2.50. This implies that the 13 identified technology-based instructional implementation skills are required by business educators in universities and colleges of education for effective implementation of business education curriculum in south-south, Nigeria. The standard deviation values of the 13 items in the table ranged from 0.37 to 0.75 which indicates that the responses of the respondents are close to one another and the mean.

Hypothesis Two

There is no significant difference in the mean ratings of business education lecturers in universities and colleges of education on technology-based instructional implementation skills required by business educators for effective implementation of business education curriculum in south-south.

Table 4: Test of Significant Difference in the Mean Ratings of Business Education Lecturers in Universities and Colleges of Education on technology-based instructional implementation skills required by Business Educators for Business Education curriculum

Variables	N	\bar{X}	SD	DF	Std. Error	t- Cal	t- Critical	Level of Sig.	Rmks
Uni. Lecturers	42	3.68	0.46	116	0.064	1.99	1.96	0.05	Sig.
COE. Lecturers	76	3.45	0.73						

Note: Sig. = Significant at 0.05.

From the data presented on the t-test statistics in Table 4 above, it was showed that the t-calculated (t-cal) value of 1.99 is greater than the t-critical (t-tab) value of 1.96 at 116 degree of freedom. This implies that there is significant ($p < 0.05$) difference in the mean responses of business



education lecturers in universities and colleges of education on technology-based instructional implementation skills required by business educators for effective business education curriculum. Therefore, the null hypothesis of no significant ($p < 0.05$) difference in the mean ratings of the responses of universities and colleges of education lecturers is rejected on hypothesis two.

Research Question Three

What are technology-based instructional evaluation skills required by business educators for effective implementation of business education curriculum in south-south.

Table 5: Technology-based instructional evaluation skills required by Business Educators for effective implementation of Business Education curriculum

SN	Technology-based instructional evaluation skills include	\bar{X}	SD	Rmks
Ability to:				
1	Set computer-based test (CBT) questions for evaluating students' academic achievement.	3.50	0.54	Rqd
2	Conduct computer-based test (CBT) or examination for evaluating students' performance.	3.46	0.51	Rqd
3	Use computers to grade students performance in Business education test and examinations.	3.37	0.52	Rqd
4	Use computer to compute students' scores and grades in tests and examinations.	3.58	0.72	Rqd
5	Post students' test and assignment questions on the internet for online assessment.	3.40	0.51	Rqd
6	Guide all students in assessing their own learning progress in Business education using electronic gadgets.	3.49	0.50	Rqd
7	Use technologies for varieties of assessment methods such as C.A, test, mock examinations to evaluate students	3.56	0.48	Rqd
8	Use results of assessment of the students in Business education text or exams to guide instruction	3.66	0.52	Rqd
9	Manage students' results in the system for future use and reference.	3.56	0.52	Rqd
10	Cover all the contents of the subject matter while assessing students.	3.48	0.74	Rqd
Pooled Mean		3.51	0.56	Rqd

Note: \bar{X} = Mean; SD = Standard Deviation; **Rqd** = Required; Num. of Respondents = 118.

The result in Table 5 showed that the mean (\bar{x}) values of the 10 items ranged from 3.37 to 3.66 which are all greater than the cut-off point value of 2.50. This indicates that the 10 identified technology-based instructional evaluation skills are required by business educators in universities and colleges of education for effective implementation of business education curriculum in south-south, Nigeria. The standard deviation values of the 10 items in the table ranged from 0.48 to 0.74 which indicates that the responses of the respondents are close to one another and the mean.

Hypothesis Three

There is no significant difference in the mean ratings of business education lecturers in universities and colleges of education on technology-based instructional evaluation skills required by business educators for effective implementation of business education curriculum in south-south.



Table 6: Test of Significant Difference in the Mean Ratings of Business Education Lecturers in Universities and Colleges of Education on technology-based instructional evaluation skills required by Business Educators for effective implementation of Business Education curriculum

Variables	N	\bar{X}	SD	DF	Std. Error	t-Cal	t-Critical	Level of Sig.	Rmks
Uni. Lecturers	42	3.50	0.64						
COE. Lecturers	76	3.52	0.59	116	0.020	0.28	1.96	0.05	NS

Note: NS = Not Significant at 0.05.

The result presented on the t-test statistics in Table 6 revealed that the t-calculated (t-cal) value of 0.28 is less than the t-critical (t-tab) value of 1.96 at 116 degree of freedom. This indicates that there is significant ($p < 0.05$) difference in the mean responses of business education lecturers in universities and colleges of education on technology-based instructional evaluation skills required by business educators for effective implementation of business education curriculum. Therefore, the null hypothesis of no significant ($p < 0.05$) difference in the mean ratings of the responses of universities and colleges of education lecturers is accepted on hypothesis three.

Discussion of Results

The study identified 11 technology-based instructional planning skills required by business educators which include: ability to source relevant lecture materials on the internet through the use of computers and digital vices, use technological gargets to develop lesson note/lecture materials, establish learning goals using technological gargets, arrange instructional activities and materials using information and communication technologies (icts), use technology-based approach to design short term plans for students learning, use varieties of technology-based instructional methods for instructional planning, develop business education lecture notes into slides for projection during lecture and prepare zoom and other virtual classroom teaching for effective teacher-students interactions. Barroso (2019) reported that technology-based instructional resources are used by teachers to work with their students in the classroom to maximize learning. The findings agreed with that of Uwameiye and Ogunbameru (2012) who identified competencies in instructional planning as: ability to select instructional content of a lesson, construct a lesson plan and select methods and techniques for teaching a lesson. Guan-Yu (2020) found that the advancement and prevalence of technology in schools makes it a very viable option for teachers to utilize in planning, sharing, and communicating instructional information as technology-based instructions through the Web allows teachers to create and access instructional plans without time and space boundaries.

The study identified 13 technology-based instructional implementation skills required by business educators which include: ability to deliver lecture using slide and projector to teach students, deliver zoom or virtual lecture for effective learning of business education students, use varieties of technology-based instructional strategies to teach students, post lecture note on the internet for students to access and read for lecture, engaging business education students in problem solving and critical thinking instruction, use teaching technologies to promote self-directed reflective learning for students learning, promote social interaction among the students with the use of classroom technologies during instructional delivery and organise computer assisted instruction (CAI) for students' learning among others. The report of New Teacher Center of University of California (2004)



identified areas of professional competencies of teachers in instructional implementation to include: supporting students, creating and maintaining effective learning environment, effective planning of instruction, understanding and organising subject matter and assessing the students. Collet-Klingenberg (2008) found that the use of computer-aided instruction and software for instructional implementation is an area where teachers required skills for instructional purposes. Barroso (2019) reported that technology-based instructional implementation involves the ongoing use of educational software and programmes that facilitate personalized online instruction for students, where teachers requires skill update as using instructional technologies in the classroom gives teachers an opportunity to teach digital citizenship skills that demonstrate ways to use technology correctly and responsibly. Koller, Harvey and Magnotta (2020) justified teachers' need for technology-based instructional skills as it offers accessibility, training that is self-paced and matched to the learners' needs and effective learning delivery.

This study identified 10 technology-based instructional evaluation skills required by business educators which include: ability to set computer-based test (CBT) questions for evaluating students' academic achievement, conduct computer-based test (CBT) or examination for evaluating students' performance, use computers to grade students performance in business education test and examinations, use computer to compute students' scores and grades in tests and examinations, post students' test and assignment questions on the internet for online assessment, use technologies for varieties of assessment methods such as C.A, test, mock examinations to evaluate and manage students' results in the system for future use and reference among others. The finding conformed with that of Brookhart (2003) that teachers require competencies in collecting and using multiple sources of information, using term paper and using varieties of assessment methods such as continuous assessment. Muhammad, Nazir and Hajira (2019) in a study concluded that there is shifting from paper based assessment to e-assessment requires and hence modern teachers require technology-based evaluation skills through e-assessment, adaptive tests, transforming assessment and automated scoring. Barroso (2019) reported that online assessment skills are required by teachers for more efficient and immediate feedback than traditional paper testing.

Conclusion

This study examined technology-based instructional management skills required by business educators for effective implementation of business education curriculum in South-south, Nigeria. The continued reliance on conventional paper-based instructional planning, classroom face-to-face instructional implementation and paper-based evaluation is not sustainable in the face of the current technological evolution in global education. From the findings, the study concluded that technology-based instructional planning, implementation and evaluation skills are required by business educators for effective implementation of business education curriculum in south-south, Nigeria.

Recommendations

Based on the findings, the study recommended:

- i. Packaging of the identified technology-based instructional management skills into teachable programmes for re-training lecturers and training future academics for effective curriculum implementation in our school system.
- ii. Curriculum-fit ICT settings in schools to support the development, use and accessibility of technology-based curriculum implementation that is better suited to use by teachers as part of routine teaching strategies.
- iii. Organization of regular workshops, conferences and seminars on the use of technology-based instructional facilities for planning, implementation and evaluation where the lecturers will constitute the major participants for technology-based instructional skill update.



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