New Technologies Skills Need for Career Development of Teachers of Technical Colleges in Anambra State

by

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Abstract

The study investigated new technologies skills need for career development of teachers of technical colleges in Anambra State. Two research questions and two null hypotheses guided the study. Descriptive survey research design was adopted. The entire population of 87 teachers in the 12 technical colleges in Anambra State were studied without sampling. A validated five-point rating scale questionnaire containing 19 items was used for data collection. Cronbach alpha co-efficient used to establish the reliability of the instrument which yielded an overall coefficient of 0.75. Mean and standard deviation were used to answer the research questions while ANOVA was used to test the null hypotheses at 0.05 level of significance. Findings of the study revealed that the skills for using learning management systems and assistive technologies for career development are highly needed by teachers in technical colleges in Anambra State. Also, teachers in technical colleges in Anambra State did not differ significantly in their mean responses on the skills needed for using learning management systems and assistive technologies for career development based on their years of teaching experience. Conclusion and recommendations were suggested.

Keywords: Technical colleges, career development, learning management systems and assistive technologies

Introduction

Technical colleges are post primary training institutions where trade subjects are taught.Technical colleges offer vocational and technical subjects that provide enough training grounds for individuals to acquire technical awareness and useful skills necessary for mastering a particular trade. Okolie (2014) enumerated technical subjects offered in technical colleges as follows; furniture making, painting, automobile mechanics, electrical and electronics repairs and installations, radio, television and electronic work, welding and fabrication, plumbing, woodworking, carpentry and joinery among others. Also, in addition to general education, all the vocational and technical education subjects offered by technical colleges are in two parts: theory and practice (Kumazhege & Umar, 2020).

The purpose of teaching in technical colleges is to produce skill-oriented students that will meet the needs of the industrial labour market. Experiential instruction is the mandate of technical teachers in technical colleges (Ismail, Hassan, Abu-Bakar, Hussin, Mat-Hanafiah & Asary, 2018). In the context of this study, technical teachers are educators charged with the responsibility of imparting knowledge or know-how to students in technical colleges. Technical teachers are expected to use constructivist and contextual learning approaches, to helpstudents integrate new knowledge and experience with previous knowledge in a real-world setting. Hence, Yekinni (2016) articulated that product of technical colleges are expected to become highly skilled craftsmen, technicians and enterprising job creators in the society. Unfortunately, Saue (2020) submitted that craftsmen of Nigerian technical colleges are considered unemployable by employers of labour because they seem to lack the requisite competencies for the industrial workplace.

Effective transfer of practical workplace skills to students in technical

colleges depends on the instructional profile, that is, the knowledge, skills, and competence of technical teachers. Sadly, it is a common practice in Nigerian technical colleges for technical teachersto stand by the chalkboard and deliver instructional contents through verbal instruction without students' active participation. Consequently, Amaechi and Thomas (2016) averred that product of technical colleges are finding it difficult to handle complex technological projects due to the traditional based pedagogical strategies they were exposed to at tertiary institutions. In this same vein, Hassan (2016) posited that the traditional instructional methods used for teaching vocational and technical education subjects are inadequate for equipping students with creative skills, higher order thinking skills and problem-solving skills to thrive as craftsmen, technicians and job creators in the 21st century workplace. Therefore, technical teachersin technical colleges need to improve their knowledge, skills and competence in order to prepare students for the demands of the workplace.

Skill is the ability to do something well and is usually gained through training or experience. According to Shittu (2019), skill is the ability to do something with a degree of proficiency resulting from certain behaviour pattern in respect to smoothness, speed and accuracy. In this study, skills are special abilities gained by teachers in technical colleges through committed learning and practice to produce proficient craftsmen needed by employers of labour.Thus, skill is the acquisition of practical classroom competencies and modern technological kno-how that facilitate the career development of teachers in technical colleges. Therefore, improving the instructional profile of teachers in technical colleges means that they need to work on their career development in order to increase the quality of their instructional delivery. According to Noe in Milka (2017), career development requires individuals to understand the needs to seek for knowledge, achievement, skills and personal objectives through career exploration, career goals determination and career strategies implementation. Career development is all about preparing individuals to be productive and efficient in their duties in an organization. According to Busro (2018), the goals of career development are realizing organizational activities in helping individuals analyze their abilities and interests tailored to their needs, developing individuals to improve the capabilities needed by employers of labour and providing opportunities for individuals to fill important positions in the organization.

Career development is process of acquiring requisite skills needed to stay relevant in the workplace. In the teaching profession, Celik (2017) posited that career development anchored on solving the barriers of student's success. Teacher career development should be centered on measuring student's achievement and addressing the pedagogical problems which arise from educational methods (Yuner, 2022). Teacher career development provides an opportunity for teachers to evaluate their instructional skills and competencies in line with the demands of the 21st century. In the context of this study, teacher career development cuts across the re-skilling and up-skilling of technical teachersto be able to provide qualitative work-based learning experiences to students in technical colleges. No wonder, Syafarunddin, Susanti and Hasanah (2019) submitted that teacher career development is geared towards increasing the quality of learning.Thus, one can infer that teacher career development promotes thecompetence of technical teachers and develops their career as effective facilitators of lifelong skills for students.

Career development covers future skills that are to be acquired as part of a career path by teachers. Hence, Altun (2017) averred that one of the dimensions of teacher career

development is the ability to use new technologies. In other words, that the ability to effectively use technological platforms in the classroom enhances the career development of technical teachers. Using new technologies occupy a major component of teacher career development because it encourages the improvement of skills, knowledge and teaching methods of technical teachers to help students learn better and compete successfully in the world of work. Cumming, Strnadova and Singh (2014) elucidates those new technologies are mostly internet and computer-based resources that enhance instructional delivery and extend instructional experiences beyond the traditional physical boundaries of schools. Okorafor and Onokpaunu (2023) opined that, new technologies are technological gadgets and software that increase students' involvement and interest in the acquisition of hard and soft skills needed in the world of work.

This means that the use of new technologies by technical teachersnot only facilitate instructional best practices but alsoimprove the employability attributes of students of technical colleges.New technologies in educational environment, according to Landers and Armstrong (2017), include computer-based instruction, interactive multimedia resources, social media resources, assistive technology resources, virtual learning resources, hypermedia technology resources, learning management systems, social media and digital games among others. For this study, the researcher focused on learning management systems and assistive technologies because they can positively influence the pedagogical and career development of technical teachers.

Learning management system is a set of software package that support administration of one or several courses to a student or group of students in a centralized online environment. Emelyanova and Voronina (2014) defined learning management systems as course management applications that provides 24/7 accessibility to course materials. They are web-based platforms that assist educators in delivering instructional resources, supports knowledge sharing and communication among students (Zain, Fadil & Hadi, 2018). Learning management systems are e-learning platforms that provide students with the ability to use interactive features such as threaded discussions, video conferencing and discussion forums to automate defined instructional objectives and learner outcomes (Fındık-Coşkunçay, Alkış & Özkan-Yıldırım, 2018). With learning management systems, technical teachers could teach vocational and technical subjects offered in technical colleges in a realistic and creative manner, where students are given the flexibility needed to meettheir unique learning needs. Currently, in technical colleges in Abia State, there are students with different learning disabilities. The new technology that provides a scaffolding lifelong support for students with different learning disabilities is assistive technology.

Assistive technologies are specialized technologies that help students with reading, listening, organizing information or writing difficulties in order to succeed within and outside the classroom. According to Chukwuemeka and Samaila (2020), assistive, adaptive or rehabilitative technologies are learning resources specifically made or adapted to serve as technical assistance for students and professionals with disabilities. Examples of assistive technologies, as outlined by Cennamo, Ross and Ertmer in Komolafe (2020), include speech synthesizers, speech recognition, tape recorders, frequency modulated amplification systems, text-to-speech synthesizers, closed-circuit television magnification, braille and screen readers among others.Using assistive technologies will promote inclusivity and remove barriers that may exist between technical teachers and

students with learning disabilities in the classroom.

The call for a shift from the traditional based instruction to technology-based instruction that holistically promotes theoretical knowledge, skills acquisition and workplace competencies development gives credence to the career development of technical teachers. This implies that educators need the requisite skills to keep pace withchanges and developments in society. The ratings of skills needed for using new technologies for career development of technical teachersin technical colleges could be influenced by their years of teaching experience in Anambra State.

Years of teaching experience refers to the professional experiences gained by technical teachers over the years. Years of working experience of individuals can be categorized as low, moderate and high depending on the years of work (Okolocha & Baba, 2017). Okolocha and Baba further submitted that individuals who have worked in offices within 1 – 5 years fall into the low working experience, those who have worked within 6 – 10 years belong to moderate working experience while those who have worked above 10 years fall into high working experience. It is against this backdrop that this study sought to determine thenew technologies skills need for career development of teachers of technical colleges in Anambra State

Statement of the Problem

In most classrooms of technical colleges in Anambra State, technical education subjects are mostly taught with theories without hands-on learning experiences. The end result of this ugly reality is that craftsmen of technical colleges would not be able to curtail the menace of unemployment and reduction of poverty in the society. Thus, it is important to find out technological skills needed for the career development of technical teachersthat will contribute positively to student's successin the workplace. The problem of this study, therefore was, that the new technologies skills need for career development of teachers of technical colleges in Anambra Stateis not clearly known. Hence, the problem that this study sought to solve

Purpose of the Study

The study determined the new technologies skills need for career development of teachers of technical colleges in Anambra State. Specifically, the study determined the:

1. Skills needed for using learning management systems for career development of technical teachers in technical colleges in Anambra State
2. Skills needed for using assistive technologies for career development of technical teachersin technical colleges in Anambra State

Research Questions

The following research questions guided the study:

1. What are the skills needed for using learning management systems for career development of technical teachersin technical colleges in Anambra State?
2. What are the skills needed for using assistive technologies for career development of technical teachersin technical colleges in Anambra State?

Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

1. Technical teachersin technical colleges in Anambra State do not differ significantly in their mean responses on the skills needed for using learning management systems for career development based on their years of teaching experience.
2. Technical teachersin technical colleges in Anambra State do not differ significantly in their mean responses on the skills needed for using assistive technologies for

career development based on their years of teaching experience (Experienced and Less Experience teachers).

Methodology

This study adopted descriptive survey research design. The entire population of 87 technical teachers in the 12 technical colleges in Anambra State were studied without sampling. The instrument for the data collection was a structured and validated questionnaire that is divided into two different sections. Section A of the instrument contained personal information of the respondents and Section B is made up of questionnaire items generated from the literature reviewed which are clustered into two parts; B1 – B2. B1 contained nine items onskills needed for using learning management systems for career development of technical teachersand B2 contained 10 items on skills needed for using assistive technologies for career development of technical teachers

The questionnaire was structured on a five-point rating scale of Very Highly Needed (VHN), Highly Needed (HN), Moderately Needed (MN), Slightly Needed (SN) and Not Needed (NN). A pilot test was conducted to establish the internal consistency of the instrument by administering it to 10 technical teachersin technical colleges in Delta State which were not part of the study. Cronbach alpha was used to obtain reliability coefficients of 0.78 and 0.71 for the different clusters with an overall coefficient of 0.75. The researchers administered the instrument to the respondents in their offices with the help of five research assistants. Out of the 87 copies of the questionnaire administered, only 79 copies (representing 91 percent) were successfully retrieved and used for data analysis.

Mean and standard deviation were used to answer the research questions and determine the homogeneity or otherwise of the respondents' views. The decision on the research questions was based on the real limits of numbers. Therefore, items with mean ratings of 1.00 - 1.49 were rated Not Needed (NN), those with 1.50 - 2.49 are Slightly Needed (SN), items with mean ratings of 2.50 – 3.49 are Moderately Needed (MN), 3.50 – 4.49 are rated Highly Needed (HN) and mean ratings of 4.50 - 5.00 are Very Highly Needed (VHN). Inferential statistics of t-test was employed for testing the null hypotheses at 0.05 level of significance. The hypothesis was accepted where the p-value is greater than the alpha level of 0.05 ($p > 0.05$), degree of freedom; otherwise, the null hypothesis was rejected. The analysis was carried out using SPSS version 23.0.

Results

Research Question 1

What are the skills needed for using learning management systems for career development of technical teachers in technical colleges in Anambra State?

Data relating to this research question were analysed and presented in Table 1.

Table 1: Respondents' mean ratings on the skills needed for using learning management systems for career development of technical teachersin technical colleges

S/N	Skills needed for using learning management systems	$\bar{X}$	SD	Remarks
1	Ability to use Moodle learning management system to improve the quality of learning	4.13	.86	Highly Needed
2	Ability to use Sakai learning management system to improve the quality of learning	4.20	.53	Highly Needed
3	Ability to use ATutor learning management system to improve the quality of learning	4.18	.72	Highly Needed
4	Ability to use Canvas learning management system to improve the quality of learning	4.21	.49	Highly Needed
5	Ability to use Chamilo learning management system to improve the quality of learning	4.36	.61	Highly Needed
6	Ability to use Blackboard learning management system to improve the quality of learning	4.29	.83	Highly Needed
7	Ability to use Desire2Learn learning management system to improve the quality of learning	4.16	.50	Highly Needed
8	Ability to use Edmodo learning management system to improve the quality of learning	4.22	.77	Highly Needed
9	Ability to use Schoology learning management system to improve the quality of learning	4.14	.46	Highly Needed

Data in Table 1 showthat the nine items listed skills for using learning management systemswere highly needed by respondents with mean ratings ranging from 4.13 to 4.36. The cluster mean score of 4.21 showed thatthe skills for using learning management systems for career development were highly needed by technical teachersin technical colleges in Anambra State. The standard deviations for all the items are within 0.46 to 0.86. This shows that the respondents are not wide apart in their ratings

Hypothesis 1

Technical teachers in technical colleges in Anambra State do not differ significantly in their mean responses on the skills needed for using learning management systems for career development based on their years of teaching experience (Experienced and Less Experience teachers).

Table 2: ANOVA summary ofrespondents' mean responses on the skills needed for using learning management systems for career development of technical teachers in technical colleges

Source of Variance	Sum of Squares	df	Mean Square	F	p-value	Decision
Between Groups	509.11	2	77.563	.105	.133	Accepted
Within Groups	23407.86	76	424.002			
Total	23916.97	78				

Data on Table 2 shows that the F-value of 0.105 with p-value of 0.133 at degree of freedom of 2 and 76 is greater than the criterion value of 0.05 ($p>0.05$). This means that technical teachers in technical colleges in Anambra State did not differ significantly in their mean responses on the skills needed for using learning management systems for career development based on their years of teaching experience. Therefore, the null hypothesis was accepted.

Research Question 2

What are the skills needed for using assistive technologies for career development of technical teachers in technical colleges in Anambra State?

Data relating to this research question were analysed and presented in Table 3

Table 3: Respondents' mean ratings on the skills needed for using assistive technologies for career development of technical teachersin technical colleges

S/N	Skills needed for using assistive technologies	$\bar{X}$	SD	Remarks
10	Ability to use braille for instructional delivery	4.07	.46	Highly Needed
11	Ability to use sign language videos for instructional delivery	3.98	.63	Highly Needed
12	Ability to use electronic books for instructional delivery	3.76	.77	Highly Needed
13	Ability to use spell checkers software for instructional delivery	4.11	.51	Highly Needed
14	Ability to use audio/hearing loopsfor instructional	4.03	.72	Highly Needed
15	delivery			
	Ability to use text to speech software for instructional	4.17	.48	Highly Needed
16	delivery	3.92	.50	Highly Needed
17	Ability to use tape recorders for instructional delivery	4.20	.75	Highly Needed
	Ability to use graphic word processing softwarefor			
18	instructional delivery			
	Ability to use speech to text softwarefor instructional	4.08	.41	Highly Needed
19	delivery			
	Ability to use word prediction softwarefor instructional delivery	4.13	.56	Highly Needed

Data in Table 3 showthat the 10 items listed skills for using assistive technologieswere highly needed by respondents with mean ratings ranging from 3.76 to 4.20. The cluster mean score of 4.05 showed that the skills for using assistive technologies for career development were highly needed by technical teachersin technical colleges in Anambra State. The standard deviations for all the items are within 0.41 to 0.77. This shows that the respondents are not wide apart in their ratings**.**

Hypothesis 2

Technical teachersin technical colleges in Anambra State do not differ significantly in their mean responses on the skills needed for using assistive technologiesfor career development based on their years of teaching experience (Experienced and Less Experience teachers).

Table 4: ANOVA summary ofrespondents' mean responses on the skills needed for using assistive technologiesfor career development of technical teachers in technical colleges

Source of Variance	Sum of Squares	df	Mean Square	F	P-value	Decision
Between Groups	470.95	2	55.346	.309	.264	Accepted
Within Groups	28275.43	149	138.827			
Total	51189.43	151				

Data on Table 4 shows that the F-value of 0.309 with p-value of 0.264 at degree of freedom of 2 and 76 is greater than the criterion value of 0.05 (p>0.05). This means thattechnical teachersin technical colleges in Anambra State did not differ significantly in their mean responses on the skills needed for using assistive technologies for career

development based on their years of teaching experience. Therefore, the null hypothesis was accepted.

Discussion of findings

Finding of the study revealed that the skills for using learning management systems for career development are highly needed by technical teachersin technical colleges in Anambra State. The findings of this study agree with Chigozie-Okwum,Ezeanyeji and Odii (2018) who reported that educators in Nigeria greatly needed the skills for using learning management systems in their instructional process.The study clearly shows that the ability to use Moodle learning management system, Sakai learning management system, Canvas learning management system, Edmodo learning management system and Blackboard learning management system among others are highly needed by technical teachers to improve the quality of learning in technical colleges in Anambra State. This finding is in tandem with Alumona andAkinseinde (2023) who reported that skills are highly needed by educators to improve the level of implementation of the learning management systems in educational institutions.

In addition, the study revealed that technical teachersin technical colleges in Anambra State did not differ significantly in their mean responses on the skills needed for using learning management systems for career development based on their years of teaching experience. This is in line with the study of Deku, Michael, Eco and Owusu (2024) who reported that years of teaching experience of educators did not influence their mean responses on the skills needed for using learning management systemsin schools.This finding means that technical teachers, irrespective of their working experience shared the same position regarding the skills needed for using learning management systems for career development in technical colleges in Anambra State.

Outcome of the study disclosed that the skills for using assistive technologies for career development are highly needed by technical teachersin technical colleges in Anambra State. This finding is consistent with Onivehu, Ohawuiro and Oyeniran (2017)who disclosed that most Nigerian educators highly needed the skills for regularly using assistive technologies to teach students with learning disabilities.The study clearly shows that the ability to use braille, electronic books, text to speech software, word prediction software, graphic word processing software and audio/hearing loops among others are highly needed by technical teachers for instructional delivery in technical colleges in Anambra State.The findings corroborate the findings ofOlugu (2020) who reported that skills are highly needed by educators to use assistive technologies to accommodate students with learning disabilities in their instructional practices.

The study equally discovered that technical teachersin technical colleges in Anambra State did not differ significantly in their mean responses on the skills needed for using assistive technologies for career development based on their years of teaching experience. This means that technical teachers, irrespective of their years of teaching experience in technical colleges shared the same opinions on the skills needed for using assistive technologies. The findings support the reports of Umoeshiet (2020) that irrespective of years of teaching experience, skills for effective utilization of assistive technologies are highly needed by educators in educational institutions.

Conclusion

Career development encourages better use of requisite skills for the professionalism of educators. From the findings of this study, it was concluded thattechnical teachers in technical colleges in Anambra State will be able to design and implement qualitative learning environment and sustain their careers

with the use of learning management systems and assistive technologies.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. Technical teachersengage in self-sponsored training programmes to acquire the basic and advanced skills for using learning management systems and assistive technologies in their instructional delivery in technical colleges in Anambra State.
2. Management of technical colleges in Anambra State should organize periodic refresher workshops for technical teachersand sponsor them to conferences and higher education programmes to upgrade their skills and knowledge on learning management systems and assistive technologies for quality teaching and learning.
3. Management of technical colleges in Anambra State should partner with ICT manufacturing companies on the provision of learning management systems and assistive technologies and training of technical teacherson how to use these technologies to not only support teaching and learning but will also improve vocational and technical education programme to meet global standards of the 21st century.

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