

International Journal of Research Pedagogy and Technology in Education and Movement Sciences

2025 Volume 14 Number 2 APR-JUN

Research Article

Pedagody

Teachers Pedagodical And Subject Matter Competence For Effective Instructional Delivery Of Pre-Vocational Studies Curriculum In Upper Basic Education In South East Nigeria

Onwadi R^{1*†}, Obasi S^{2†}

DOI:https://doi.org/10.55968/ijems.v14i02.506

^{1*†} Rachael Onwadi, Department of Educational Foundations, University of Abuja, Abuja, Nigeria.

^{2†} Susan Obasi, Department of Educational Foundations, University of Abuja, Abuja, Nigeria.

It is indisputable that teachers have an impact on how well school courses are taught. In a similar vein, teachers' ability to effectively teach subjects is crucial to students' academic success. This study evaluated the pedagogical and subject-matter proficiency of teachers in upper basic education in southeast Nigeria for the purpose of effectively delivering the pre-vocational studies curriculum. Two research questions and two related hypotheses were developed in order to accomplish the study's goal. The descriptive survey design was used in the investigation. In 1,305 upper basic schools across the five states of southeast Nigeria, there were 2,610 management staff members and 1,865 pre-vocational teachers who comprised the study's population. The stratified and simple random sampling method was used to select 232 managements and 332 prevocational subject teachers as the study's sample size. A reliability index of 0.91 was determined. Frequency counts and mean scores for the study questions were utilized to descriptively examine the data, and the ttest and ANOVA were employed to assess the hypotheses. According to a one-way ANOVA, the mean effects of teachers' subject matter expertise on the implementation of the pre-vocational studies curriculum in upper basic education across the five states of southeast Nigeria were statistically negligible. An action plan should be implemented by the government and management to increase teachers' proficiency in using contemporary pedagogy for the successful implementation of prevocational curricula. To support teachers' professional development and efficacy in teaching prevocational studies, it is important to encourage ongoing supervision of instruction.

Keywords: Teachers, pedagogy, subject matter, competence.

Corresponding Author	How to Cite this Article	To Browse
Rachael Onwadi, , Department of Educational Foundations, University of Abuja, Abuja, , Nigeria. Email: samuel.adams@uniabuja.edu.ng	Onwadi R, Obasi S. Teachers Pedagodical And Subject Matter Competence For Effective Instructional Delivery Of Pre-Vocational Studies Curriculum In Upper Basic Education In South East Nigeria. ijems. 2025;14(2):1-14. Available From https://ijems.net/index.php/ijem/article/view/506	



Introduction

Prior to the arrival of western education, many African societies used distinctive or traditional, vocational methods to teach their children and preserve their culture. Traditional African communities employed indigenous educational systems to teach their children and preserve their culture before the advent of western education. Without classrooms, school buildings, or other amenities like those found in the formal school system, indigenous education was conducted informally. The development of western education in Nigeria began with the arrival of missionaries in the 1840s. The establishment of teacher training colleges was necessary to train competent teachers for the educational system because of the shortcomings of the various missionaries in providing western education, as found by the Phelps-Stokes Commission, which was established by the British colonial government (Fafunwa, 2001). But there weren't enough instructors being trained at the time, either in terms of quality or number. Training in occupational skills, morals, and character was the main objective of Nigeria's traditional educational system, which was heavily influenced by the country's culture. The goal of Western education, which was first implemented bv missionaries in 1842 and then by the colonial government, was to enable whoever had the chance to learn it to serve the missionaries' objectives rather than to help citizens become self-sufficient (Eche & Nwankwo, 2011). As a result, our educational system's vocationally oriented courses began to decline. Because it prioritized academic knowledge over the development of practical skills, the curriculum failed to meet the demands of Nigerian youth (Fafunwa, 2003). Technical and vocational education had to be re-engineered as a result of the colonial government's and missionaries' inadequate teacher training program and poorly designed curriculum, which did not represent the goals of indigenous education. Vocational and technical education did not receive government attention until the 1930s global economic downturn, claims Akram (2012). In order to generate middlelevel technical labor, colonial governments thus began establishing training institutions. One such institution was Yaba Higher College, founded in 1932. Vocational education in Nigeria started slowly and progressed more slowly than literacy education,

Which was started by nonprofit organizations. This was due in part to the fact that it was far more costly in terms of personnel and equipment, among other things. Even though mission schools and the apprenticeship system provided vocational training to youth, there were insufficient resources and inexperienced vocational instructors to effectively teach practical skills. Different governments in Nigeria have acknowledged and accepted this truth; the issue is how to make it work. Numerous studies have questioned the effectiveness of Nigeria's teacher training programs in preparing vocational teachers for the twenty-first century (UNESCO, 2012) The incapacity of teacher-training institutes to generate vocational teachers who possess the necessary pedagogical and content knowledge, professional collaboration skills, and a solid foundation has been criticized (Ayub, 2017). The core of any country's educational system is its curriculum. Every educational level's goal and objective are covered in the curriculum, which also offers the pedagogical guidelines and clarity necessary for effective implementation. No country can surpass the caliber of its instructors, according to the Federal Republic of Nigeria's National Policy on Education (FRN, 2012). This just suggests that the translation, interpretation, and application of the curriculum are under the legal purview of the teachers. Thus, this necessitates that educator have the appropriate abilities to facilitate successful implementation. Pedagogy is one of the skills a teacher needs in order to carry out the curriculum in an efficient manner. The ability of a teacher to exercise or carry out her job function or task (instructional delivery) based on the abilities, knowledge, and attitudes required by the teaching act itself is known as pedagogic competence. All educational levels' teachers are important contributors to high-quality instruction. They are the most crucial members of the educational apparatus and play a major role in the accomplishment of any government-sponsored educational initiative. This is due to the fact that, in addition to being at the implementation level of any educational policy, the success of these programs also heavily rely on the proficiency, commitment, and hard work of teachers (Adeniji, 2014). The primary prerequisite for teachers to carry out their responsibilities and pursue their careers professionally is their competency. According to Ayub (2017), teachers bear the ultimate responsibility for converting educational

Policies and principles into practice-based behaviors during interactions with students. When teachers are skilled in their field, this process can proceed successfully. Mastery of the subject matter, an awareness of human nature to enhance professional knowledge, workshops, seminars, efficient communication, and sufficient information are all components of teacher competency. According to Stavreva (2013), teacher competence is the range of information, abilities, and attitudes that are demonstrated in thoughtful behavior and a sense of responsibility when performing the duties of a teaching agent. This covers social, professional, educational, and personal aspects of the job. The ability to build teacher conduct and capacity as minimum professional requirements based on the current regulations to enhance the role of the profession has teaching been regarded ลร pedagogical and subject matter competence, which are key variables in this study (UNESCO, 2020). By knowledge, professional and applying life experience, values, and talents in a creative manner, teachers can solve problems and complete pedagogical tasks with precision and effectiveness. This is reflected in pedagogic competence, which reflects teacher competence terms in of collaboration, comprehensive view, and contribution to pedagogic development. Southeast Nigeria has long been recognized for its entrepreneurial and vocational abilities, which are ingrained in its culture. The majority of young people in this region of Nigeria have made acquiring these skills their top priority. From the early 1990s until the end of the 2000s, the education system in the southeast region of Nigeria was characterized by a high percentage of school-age dropouts, primarily boys, who go on to pursue careers in business and other fields without having the necessary skills to succeed. Young people's dropout syndrome has created significant challenges for social and economic advancement and constituted a threat to national development since they lack the necessary skills to improve society. Therefore, the Back-to-School program, which was introduced during the 1990s and early 2000s when the government was in power, specifically referring to the period of the former Anambra State Government under Peter Obi's educational revolution in Anambra and programs in other states, brought with it the challenge and dedication to education with a particular focus on the acquisition of vocational skills among school-age children. Anyikwa

Claims that the Millennium Development Goal (MDG, 2012) was a wake-up call to establish skill and vocational centers in communities and schools in Southeastern states. This was done to train youth, particularly those in junior secondary school, and give them the chance to advance their vocational skills. There is still evidence of low student performance in the subjects that comprise pre-vocational studies, despite the claims of various authorities and the admirable efforts of the government and curriculum planners to reintroduce entrepreneur and pre-vocational studies at the upper basic education level to enable school leavers to acquire different skills. Is it possible that teachers lack the necessary skills and expertise to carry out the prevocational studies curriculum? What about the subject area expertise of teachers for successful implementation, even if they weren't the case? Therefore, the purpose of this study is to determine how teachers' pedagogical and subject-matter expertise affects the efficient delivery of the prevocational studies curriculum in South East Nigerian upper basic schools.

Answering Research Questions

Research Questions One:

How well do teachers' pedagogical skills enable the pre-vocational studies curriculum to be implemented in upper basic education across the five states of southeast Nigeria?

Research Question Two:

How much does the successful execution of the prevocational studies curriculum in upper basic education in the five states of southeast Nigeria depend on the subject matter expertise of teachers?

1.2 Test of Hypotheses

Hypothesis one:

H01: Regarding how much teachers' pedagogical proficiency affects the execution of the prevocational studies curriculum in upper basic education across the five states of southeast Nigeria, there is no discernible difference between the mean evaluations of management and teachers.

Hypothesis two:

H02: Regarding the degree to which subject matter knowledge affects the execution of the prevocational studies curriculum in upper basic education throughout the five states Of southeast Nigeria, there is no discernible variation in the mean ratings of management and instructors.

2.0 Theoretical Framework

The Social Cognitive Career Theory (SCCT) was used in this investigation. Robert, Steven, and Hackett created the SCCT hypothesis in 1994 (Lent, Brown & Hackett, 1994). The general social cognitive theory of Albert Bandura serves as the foundation for SCCT, as it is commonly known. The four components of this idea include how people develop their career interests, establish their vocational goals, stick with their jobs, and find employment satisfaction. Three interconnected aspects of career development are intended to be explained by the relatively new Social Cognitive Career Theory (SCCT): (i) how fundamental academic and career interests arise; (ii) how educational and career choices are made; and (iii) how academic and career success is attained. A wide range of ideas are included in the theory, including values, interests, aptitudes, and influences. environmental The fundamental components of SCCT are three interconnected variables: goals, result expectancies, and selfefficacy beliefs. It implies that people's ambitions to succeed would be predicted by their self-efficacy beliefs and outcome expectancies with relation to self-employment. This implies that people (prevocational studies instructors) would act in a way that will assist them reach their objective (i.e., becoming competent teachers) if they have faith in their capacity to carry out an activity and anticipate the results of that behavior. In conclusion, prevocational teachers will develop a lasting interest in teaching if they believe they are capable of doing so and if they anticipate that their instruction will result in worthwhile outcomes. As a result, one of main factors influencing the successful the implementation of the school curriculum is the efforts made by instructors to foster interest, support career goals, and challenge themselves to become competent. Because it provides a helpful framework for understanding the development of educational and pre-vocational interests, teacher performance, and decision-making, SCCT and its main components are deemed pertinent to this study.

2.1 Implementation of the Curriculum

A critical dynamic complex interaction between people and things in a free-flowing environment is called curriculum. It consists of: issues to discuss, forces to justify, objectives to clarify, initiatives to initiate, and results to assess (James, 2017). Curriculum entails creating connections between disciplines or areas of knowledge and bringing disparate subjects together under a single heading. According to the aforementioned, integrated curriculum areas including business studies, home practical agriculture, and economics, basic technology are broad courses (Eneh, 2010). Prevocational courses, or practical-oriented subjects, are part of the Upper Basic Education curriculum, which aims to enhance Nigeria's economy and technology. Basic Technology, Business Studies, Home Economics, and Agriculture are the four prevocational education subject areas that are covered on an integrated basis at the Upper Basic Education Curriculum (Oviawe, Ezeji & Uwameiye, 2015). The curriculum is implemented following the planning process, which identifies the objectives, content, learning experience, and materials based on their value presumed in guaranteeing the accomplishment of the specified goals. Curriculum implementation is the process of putting the curriculum into practice or action in order to achieve the goals.

2.2 Concept of Teacher Competence

The idea of teacher competency Competence in the teaching context includes temperament, cognitive and practical abilities, and explicit and tacit knowledge. For this reason, Miller, Bakar, and Ikatule (2010) contended that since students are the major clients of educational institutions, teacher competency should allow the instructor to stay dedicated to students and their learning objectives. For this reason, a teacher should employ a range of teaching strategies in the classroom accommodate students' interests, knowledge, and skills while also fostering a calm atmosphere. A competent teacher is one who supports learning; it is his responsibility to use a range of instructional strategies and tactics to plan lessons and determine whether or not students have accomplished the intended goal. Knowledge, skills, beliefs, attitudes, and professional ethics are the essential competencies needed for an effective teacher. Knowledge competence, content and pedagogical competence, professional competence, and modern knowledge are other subcategories

Of this. Therefore, competence is a key factor in determining an individual's internal motivation and real ability to perform activities in the future. Ranija (2016). Teachers must possess the following competencies: pedagogical, personal, professional, and social. In a setting with few resources and several factors contributing to kids' poor performance, teacher competency becomes crucial. According to some research, the effectiveness of a teaching strategy depends mostly on the instructor, who must possess competences that can be measured by knowledge, skills, and conduct (Aziz & Akhtar, 2014). Teaching Methods and Subject Matter Proficiency The ability to execute or carry out a task that is founded on abilities, knowledge, and attitudes that are supported by work in accordance with the needs of the job is known as competence.

2.3 Pedagogical and Subject Matter Competence

Competency, according to Onsare (2014), is an underlying quality of a person that is connected to how well a person performs on the job or to the fundamental traits of people who have a cause-andeffect relationship with the aforementioned criteria, such as effective, excellent, or superior performance at work or in particular circumstances. The term "pedagogical competence" refers to the idea that teachers must possess in order to effectively teach and learn. Teaching credentials and education are equally referred to as pedagogical competence. The sort of competency has to do with how to modify teaching strategies and learning processes to meet the demands of the students (Mustafa, 2013). Sound, comprehensive, and up-to-date knowledge of the subject matter, as well as an understanding of students' learning and subject-based teaching and learning challenges, are the foundations of pedagogical competency. Increasing pedagogical competency enables teachers to fulfill the requirements of many learners and take individuality into consideration in pre-vocational studies when students struggle to make decisions from the abundance of information they are presented. This is due to the fact that courses on these competences are not commonly included in teacher preparation programs. For pre-vocational teachers, pedagogic competence refers to the teacher's capacity to oversee students' learning, including their comprehension, the design and execution of lessons, the assessment of learning objectives, and the growth

Of students to reach their full potential (Ede, 2014). Innovative teaching methods can improve students' comprehension and application of the skills in the classroom. The ability of a teacher to convert their content knowledge into forms that are both pedagogically effective and flexible enough to accommodate students' varying skill levels is the key to differentiating the teaching knowledge base (Liakopoulou, 2011). The prudent blending of subject-matter expertise, language and communication skills, and the mastery and transfer of tried-and-true teaching methods in the classroom with the goal of raising students' academic achievement in schools is known as subject matter competence. One of the most crucial components of a teacher's competency is their mastery of the material (Ebiringa, 2012). According to Onsare teacher's content/subject (2014),а matter competency is their extensive and current understanding of their field. It is important to emphasize that a teacher should be educated in his field and familiar with the values and tenets that underpin it. Therefore, it is the teacher's ability to give his lesson in a satisfactory manner by having the necessary skills, knowledge, and abilities. Their thorough comprehension of the material gives them the confidence to choose the teaching methods and techniques that will best aid students' comprehension. Additionally, it is required of teachers to exhibit a deep comprehension of the subject matter covered in their courses. According to Amusan (2016), they should be able to convey this subject to pupils in ways that are suitable for their age and skill level. Competence is invariably linked to a teacher's capacity to comprehend students, the learning process, and selfactualization. This implies that a competent teacher should be able to communicate as well as possess the fundamental knowledge and abilities of the subject. In order to teach effectively, a teacher must be well-versed in all the material that the students need to know and be able to adapt the pace, technique, and sequence of his lessons to each student's unique needs. They adamantly maintained that a teacher of a certain subject needs particular, subject-specific skills and competencies. Thus, according to Anselmus (2011), pedagogical and subject matter competence is the capacity to oversee students' learning, which encompasses knowledge of students, content and material selection, instructional design and implementation, assessment of learning outcomes, and helping

Students reach their full potential. Similarly, Cubukcu (2010) listed the following elements of pedagogical and subject matter competence:

- 01. regulates the physical, spiritual, moral, social, cultural, emotional, and intellectual characteristics of learners;
- 02. chooses learning theories and principles that educate;
- develops curriculum related to the subject matter and chooses instructional strategies;
- 01. conducts educational learning;
- 02. chooses and uses instructional resources for the purpose of learning;
- 03. helps potential learners reach their full potential;
 - communicate effectively, empathetic, and manner with the students;
 - conducts the assessment and evaluation processes and learning outcomes;
- 01. uses the assessment and evaluation for the purpose of learning; and
- 02. takes action to enhance the quality of reflective learning.

The ability to incorporate theory and practice into classroom activities is a prerequisite for teacher competency (UNESCO, 2020). Pre-vocational teachers must therefore be able to create learning objectives that take into account the backgrounds of vocational learners. For better learning results, prevocational teachers must also employ a variety of instructional strategies and a hands-on approach that aligns with the learning objectives.

3.0 Materials and Methods

The research design used in the study was a descriptive survey. Two thousand six hundred and ten management staff (2,610) and 1,865 pre-vocational teachers from 1,305 upper basic schools in the five states of southeast Nigeria, Abia, Anambra, Ebonyi, Enugu, and Imo—made up the study's population. Two hundred and thirty-two management staff (232) and three hundred and thirty-two (332) prevocational subjects teachers selected from the upper basic education system in the five states of southeast Nigeria made up the study's sample size. The study employed stratified and simple random selection techniques

To choose a sample of 18% prevocational teachers and 5% management workers, respectively. A pilot test was conducted using the split-half approach on a random sample of 30 pre-vocational studies teachers in upper basic education in the study area, but not among the sample, in order to determine the instruments' reliability. Cronbach Alpha was used to examine the collected data in order to determine internal consistency. A reliability index of 0.91 was determined. The demographic data was analyzed using descriptive statistical tools such as percentage, frequency count, and component bar chart, and the research issues were addressed using mean scores. The developed hypotheses were tested at the 0.05 level of significance using inferential statistics like ANOVA.

4.0 Results

4.1 Answers to Research Question

4.1.1 Research Questions One:

How well do teachers' pedagogical skills enable the pre-vocational studies curriculum to be implemented in upper basic education across the five states of southeast Nigeria?

Table 11: Effectiveness of teachers' pedagogicalcompetence in the implementation of pre-

Vocational studies curriculum in upper basic education N=528

s/	Statement	Stat							
Ν		es	R	es	ърс	on			
				S	e				
			V	Е	F	v	То	Mean	Decisio
			E	(Е	Ι	tal	score	n
			(3	((
			4)	2	1			
)))			
1.	Possession of the right competence in	Abia	1	4	2	2	11	2.52	Effecti
	lesson planning for effective curriculum	Ana	6	7	5	2	0	2.52	ve
	implementation	mbr	1	4	2	1	99	2.66	Effecti
		а	3	2	7	7	83	2.49	ve
		Ebo	1	3	1	1	13	2.43	Effecti
		nyi	6	6	8	3	1		ve
		Enu	1	5	3	2	10		Fairly
		gu	9	4	0	8	5		effecti
		Imo	1	3	2	2			ve
			6	9	4	6			Fairly
									effecti
									ve

Teachers Pedagodical Subject Matter Competence Effective Instructional Delivery Pre-Vocational Studies Curriculum Upper Basic Education South East Nigeria

[Possession of adequate theoretical and practical	Abia	1	2	4	2	4	2.	Fairly
	knowledge for effective implementation of	Ana		9	3	4	1		effecti
	prevocational studies curriculum	mbr	1	2	4	2		8	
l				7					Fairly
l				2					éffecti
l				8					ve
l				3					Effecti
l		gu	1	9	5	6		5	
l		- Imo	1	3	4	1			Fairly
			4	5	0	6			effecti
								4	
							0	0	Fairly
							5		effecti
									ve
								3	
1	Teachers' possession of practical experience	Abia	1	2	3	3	1	2.	Fairly
.	contributes to effective subject delivery in the	Ana							effecti
l	teaching and learning process.	mbr	1	1	3	3	0	5	ve
l		а	4	9	5	1	9	2.	Fairly
l		Ebo	1	2	3	1	9	1	effecti
l		nyi	7	2	0	4	8	6	ve
l		Enu	2	3	4	3	3	2.	Effecti
l		gu	3	4	3	1	1	5	ve
l		Imo	1	2	3	3	3	1	Fairly
l			5	6	4	0	1	2.	effecti
l							1	3	ve
							0	7	Fairly
							5	2.	effecti
								2	ve
								5	
Z	Prevocational teachers possess the competence	Abia	2	3	2	2	1	2.	Effecti
ŀ	to develop critical approach for guiding students	Ana	7	3	9	1	1	6	ve
	learning.	mbr	2	2	2	2	О	0	Effecti
		а	2	9	7	1	9	2.	ve
		Ebo	2	2	2	1	9	5	Effecti
		nyi	0	3	2	8	8	3	ve
		Enu	2	4	4	2	з	2.	Effecti
		gu	4	0	5	2	1	5	ve
		Imo	1	3	2	2	в	4	Fairly
			8	4	8	5	1	2.	effecti
							1	5	ve
							0	0	
					l		5	2.	
					l		1	4	
					L		L	3	
-		-	-	-	-	-	-		

Teachers possess the competence in material	Abia	1	4	2	1	1	2.	Effect
development for effective implementation	Ana	9	6	7	8	1	60	ve
	mbr	2	3	2	2	0	2.	Effect
	а	1	3	5	0	9	56	ve
	Ebo	1	3	1	1	9	2.	Effect
	nyi	5	5	5	8	8	57	ve
	Enu	2	5	3	2	3	2.	Effec
	gu	0	1	4	6	1	50	ve
	Imo	1	3	3	2	3	2.	Fairly
		8	5	2	2	1	43	effec
						1		ve
						0		
						5		
Teacher pedagogical competence provides	Abia	1	4	2	2	1	2.	Fairly
opportunity for creativity, initiatives and insight	Ana	7	1	4	8	1	43	effec
in prevocational matters	mbr	1	3	2	2	0	2.	ve
	а	3	3	5	8	9	31	Fairly
	Ebo	1	2	2	2	9	2.	effec
	nyi	6	5	0	2	8	42	ve
	Enu	1	4	3	3	3	2.	Fairly
	gu	9	5	2	5	1	37	effec
	Imo	1	3	2	2	3	2.	ve
		5	8	6	6	1	40	Fairly
						1		effec
						0		ve
						5		Fairly
								effec
								ve
Pedagogical competence influences teachers	Abia	2	4	1	2	1	2.	Effec
responsiveness to innovations in prevocational	Ana	3	9	1	7	1	62	ve
curriculum implementation	mbr	2	4	1	2	0	2.	Effec
	а	0	3	0	6	9	58	ve
	Ebo	2	3	5	2	9	2.	Effec
	nyi	2	4	2	2	8	67	ve
	Enu	2	5	4	3	3	2.	Fairly
	gu	1	2	1	4	1	46	effec
	Imo	1	5	2	2	3	2.	ve
		8	3		2	1	64	Effec
					1	1		ve
					1	0		
	I	1	1	Í	1	5	L	

Teachers Pedagodical Subject Matter Competence Effective Instructional Delivery Pre-Vocational Studies Curriculum Upper Basic Education South East Nigeria

							_	_	
8	It helps prevocational teachers to understand	Abia	2	2	4	1	1	2.	Effecti
		Ana		5	0				ve
		mbr							Effecti
			3						ve
			1	2		1			Fairly
			4				8		effecti
		Enu							ve
				5					
		-	4						Fairly
		Imo		3				3	effecti
			0	3	2	0			ve
									Effecti
									ve
							5	2.	
								7	
								7	
9.		Abia						2.	Fairly
	demonstrative proficiency of teachers for	Ana	1	5	9	5	1	3	effecti
	effective curriculum implementation	mbr	1	3	4	9	0	8	ve
		а	2	7	1	1	9	2.	Effecti
		Ebo	9	2	3	1	9	5	ve
		nyi	1	9	4	1	8	3	Fairly
		Enu	6	4	5	5	3	2.	effecti
		gu	1	6	4	1	1	4	ve
		Imo	4	3	4	3	3	3	Fairly
				7	1		1	2.	effecti
							1	4	ve
							0	8	Effecti
							5	2.	ve
								5	
								0	
1	Prevocational teachers have sound and broad	Abia	1	2	3	2	1	2.	Fairly
о.	knowledge base within the prevocational	Ana	8	9	4	9	1	3	effecti
		mbr							
									Effecti
		Ebo							
									Effecti
		Enu							
							1		Effecti
		gu Imo							ve
									Effecti
			ľ	Í	Í				ve
					l	1	0		~
								2.	
							5		
								5 1	
								μ	

Teachers possess the competence in the	Abia	7	3	4	1	1	2.	Fairly
adoption of varied methods during lesson	Ana	5	7	7	9	1	29	effectiv
delivery	mbra	1	3	4	1	0	2.	е
	Ebon	0	5	2	7	9	28	Fairly
	yi	1	2	3	1	9	2.	effecti
	Enug	3	8	3	2	8	43	e
	u	1	4	4	2	3	2.	Fairly
	Imo	1	7	7	4	1	37	effecti
			3	3	2	3	2.	e
			1	5	8	1	24	Fairly
						1		effecti
						0		e
						5		Fairly
								effecti
								е

Source: Field work, 2021

Table 1 presents the result on effectiveness of pedagogical competence in the implementation of pre-vocational studies curriculum in upper basic education across the five states of South-eastern Nigeria. The result showed that Ebonyi State had the mean score of 2.51. Abia, Anambra and Enugu States had the same mean scores of 2.46 respectively; while Imo State had mean score of 2.45. The result across the five states revealed that pedagogical competence of teachers in implementation of pre-vocational studies curriculum is effective only in Ebonyi State.

4.1.2 Research Question Two:

How much does the successful execution of the prevocational studies curriculum in upper basic education in the five states of southeast Nigeria depend on the subject matter expertise of teachers?

Table 2: Extent of influence of subject matter competences of teachers in the implementation of

The pre-vocational studies curriculum in upper basic education

S/N	Statement	States		Res	pon	se			
			VHE	HE	LE	VLE	Total	Mean score	Decision
			(4)	(3)	(2)	(1)			

Teachers Pedagodical Subject Matter Competence Effective Instructional Delivery Pre-Vocational Studies Curriculum Upper Basic Education South East Nigeria

Subject matter competence influence the teaching	Abia	3	3	5	1	1	2.			1	S
methods and strategies adopted for instructional	Ana	8	3	7	7	1	2	LE		5	in
delivery of pre-vocational studies	mbr	2	4	3	1	0	0				e
	а	6	2	4	5	9	2.	LE			
	Ebo	5	3	7	1	9	4				
	nyi	0	2	3	8	8	3	HE			
	Enu	9	3	0	2	3	2.				
	gu		0	3	1	1	7	HE			
	Imo		3	8	2	3	9				
			7		1	1	2.	LE			
						1	8				
						0	3				
						5	2.				
							3				
							2			L	L
Subject matter competence has influence on	Abia						2.				Τe
teachers' disposition for effective implementation	Ana							LE		6	รเ
of the curriculum	mbr						4				
	a Eh a		5			9		LE			
		2					4				
	nyi Enu	1	6			8 3	0 2.	HE			
		ľ				1		HE			
	gu Imo			6 4		3	3	пс			
	11110		2			1		HE			
			Ĺ	ſ		1	2. 5				
						0	6				
						5	2.				
						ĺ	5				
							2				
Subject matter competence guides teachers in	Abia	2	3	4	5	1	2.			1	Po
adoption of evaluation techniques	Ana	1	5	9	7	1	6	HE		7	р
	mbr						5				de
	а	6	1	5	9	9	2.	HE			
	Ebo	1	2	3	5	9	5				
	nyi	2	6	6		8	7	LE			
	Enu	2	4	4		3	2.				
	gu	8	9	5		1	4	HE			
	Imo	2	3	4		3	9				
		0	7	3		1	2.	HE			
						1	7				
		1	1	1	1	0	3	1			
		1			1	5	2.				
		1	ĺ	I	1	1	6	l	1		1
							Ň				

1	Subject matter competence guides teachers ability	Abia	3	2	2	2	1	2.	
5.	in the selection of relevant instruction resources for	Ana	6	3	9	2	1	6	HE
	effective curriculum implementation	mbr	2	2	3	1	0	6	
		а	7	2	3	7	9	2.	HE
		Ebo	2	2	2	1	9	6	
		nyi	1	4	3	5	8	0	HE
		, Enu							
		gu					1		HE
		Imo						1	
								2.	IF
			-	ĺ		Ĭ	1	7	
								, 6	
								2.	
							ſ	2. 4	
					_	_		5	
1	Teachers with high subject matter competence	Abia						2.	
6.	sustains students interest in prevocational studies	Ana							LE
		mbr						2	
		а							HE
		Ebo						5	
		nyi	4	3	7	9	8	2	HE
		Enu	1	5	2	3	3	2.	
		gu	9	3	6	3	1	5	LE
		Imo	9	4	3	1	3	1	
				0	8	8	1	2.	LE
							1	4	
							0	4	
							5	2.	
								3	
								8	
1	Possession of subject matter competence give	Abia	2	3	3	2	1	2.	
7.	prevocational teachers confidence in lesson	Ana	0	o	9	1	1	4	LE
	delivery	mbr	1	3	3	1	0	5	
		а	7	5	4	3	9	2.	HE
		Ebo	1	2	2	1	9	5	
		nyi	3	7	8	5	8	7	HE
		Enu							
							1		HE
		Imo							
								2.	LE
					l	l		5	
					l	l	0		
					l	l		2.	
				1	1	1	ſ	4	
					l	l		6	
L	1			1	L	L		<u> </u>	

1 Adequate subject matter competence influences Abia 2 3 3 2 1 5. 8. the process of achievement of stated objectives Ana 6 0 9 1 9 4. 1 5. 8. the process of achievement of stated objectives Ana 6 0 9 9 1 9 4. 1 5. 1 0 1 2
mbra 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 3 2 3
Image: Problem 1 and the state of
vi 1 2 2 1 9 2. Enug 8 8 2 5 8 9 u 2 4 3 2 3 2. Imu 6 5 7 3 1 56 Imu 6 5 7 3 1 56 Imu 6 1 7 1 4 2. 1 Subject matter competence has influence on the Abia 2 5 1 1 2. 1 Subject matter competence has influence on the Abia 2 5 1 2. 2. 1 Subject matter competence has influence on the Abia 2 5 1 2. 2. 1 Subject matter competence has influence on the Abia 2 5 1 2. 2. 1 Subject matter competence has influence on the Abia 2 4 1 2. 2 Imu 1 2 2 2. 2. 2. 2 Imu 1 2 2
Enug 8 8 2 5 8 59 u 2 4 3 2 3 2. Immo 6 5 7 3 1 56 Immo 6 1 7 1 1 56 Immo 6 1 7 1 1 2 Immo 6 1 7 1 1 1 Immo 6 1 7 1 1 1 Immo 6 1 7 1 1 1 Immo 6 1 7 1 1 1 1 Immo 1 1 1 1 1 1 1 1 1 Immo 1 1 1 1 1 1 1 1 1 1 Immo 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
u 2 4 3 2 3 2. Imo 6 5 7 3 1 56 1 3 3 2 3 2. 6 1 7 1 1 40 1 3 3 2 3 2. 1 Subject matter competence has influence on the Abia 2 5 1 1 1 9 logical presentation of lesson Ana 4 7 1 2. 9 logical presentation of lesson Ana 4 1 1 2. 1 4 1 1 9 2. 2. 1 5 1 1 9 2. 2. 1 6 1 7 9 2. 2. 1 1 4 1 9 2. 3 2. 1 1 4 1 9 2. 3 2. 1 1 1 1 9 2. 3
Immedia image: 5 image: 7
Image: Probability of the system of
Image: series of the series
1 Subject matter competence has influence on the Abia 2 5 1 1 2 5 1 Subject matter competence has influence on the Abia 2 5 1 1 2 2 9 logical presentation of lesson Ana 4 7 1 8 1 79 1 Mbra 2 4 1 1 0 2 2 1 Mbra 2 4 1 1 0 2 2 1 4 1 1 0 2 2 7 8 4 1 1 9 2 2 7 8 8 4 1 1 9 2 2 7 8 8 4 1 1 9 2 2 1 8 8 4 1 1 9 2 2 1 1 3 2 3 2 3 2 3 2 3 2 3 3 3 3 3 3 3 3 <
1Subject matter competence has influence on the AbiaAbia25112.9Iogical presentation of lessonAna4718179mbra241102.611102.For141192.611192.Interval141192.11192.Interval1411192.13333Interval1411132.13333
1Subject matter competence has influence on the Abia251129logical presentation of lessonAna4712781Subject matter competence has influence on the mbra24112789logical presentation of lessonAna47122222111111112111221111111121112211111111211321111111111131311111111111113111 <td< td=""></td<>
1 Subject matter competence has influence on the Abia 2 5 1 1 2. 9 logical presentation of lesson Ana 4 7 1 8 1 79 mbra 2 4 1 1 0 2. Ebon 1 7 9 2 9 78 yi 1 4 1 1 9 2. Enug 8 4 1 1 9 2. Imo 3 6 1 2 3 2. Imo 9 2 0 1 83 4
9 logical presentation of lesson Ana 4 7 1 8 1 79 mbra 2 4 1 1 0 2. Ebon 1 7 9 2 9 78 yi 1 4 1 1 9 2. Endu 3 4 1 0 8 4 u 3 6 1 7 9 2. Ima 3 6 1 2 3 2. Ima 3 6 1 2 3 2.
mbra 2 4 1 1 0 2. Ebon 1 7 9 2 9 78 yi 1 4 1 1 9 2. Enug 8 4 1 0 8 84 u 3 6 1 2 3 2. Imo 0 9 2 0 1 83 1 4 3 1 3 2.
Ebon 1 7 9 2 9 78 4 yi 1 4 1 1 9 2. Enug 8 4 1 0 8 84 4 u 3 6 1 2 3 2. Imo 0 9 2 0 1 83 4 1 4 3 1 3 2.
yi 1 4 1 1 9 2. Enug 8 4 1 0 8 84 u 3 6 1 2 3 2. Imo 0 9 2 0 1 83 1 4 3 1 3 2.
Enug 8 4 1 0 8 84 u 3 6 1 2 3 2. Imo 0 9 2 0 1 83 1 4 3 1 3 2.
u 3 6 1 2 3 2. Imo 0 9 2 0 1 83 1 4 3 1 3 2.
Imo 09201883 143132.
1 4 3 1 3 2.
1 4 5 5 1 49L
5
2 Adequate knowledge of the subject matter Abia 1 6 1 1 1 2.
0. influence teacher ability to select relevant topics Ana 5 3 4 8 1 68
mbra 1 5 1 1 0 2.
Ebon 2 3 7 7 9 61
yi 159192.
Enug 2 0 1 2 8 75
u 277232.
Imo 2 1 3 1 1 72
1 3 4 2 3 2.
0 8 3 1 331

The result in Table 2 presents the extent of influence of subject matter competence on implementation of the pre-vocational studies curriculum in upper basic education in the five states of South-Eastern Nigeria. The result showed that Enugu State had the highest mean score of 2.61, followed by Ebonyi, Anambra and Abia States with mean scores of 2.56, 2.55 and 2.54 respectively. Imo State on the other hand had the least mean score of 2.45. The result showed that subject matter competence influences effective implementation of pre-vocational studies curriculum in upper basic education to a high extent in four out of the five states.

10

4.3 Test of Hypotheses

4.3.1 Hypothesis One

Table 3: One-way ANOVA result of management andpre-vocational teachers mean rating of howpedagogical competence influences theimplementation of prevocational studies curriculumacross the five states of South-eastern Nigeria

States	Ν	-x	Std.	d.f.	fcalculate	fcritica	р –	Decision
			dev.		d		Value	
Abia	11	2.4	0.6481	52	0.544	2.37	0.703	H0 is
	0	5		6				accept
Anambr	99	2.4	0.7266					
а		4						
Ebonyi	83	2.5	0.7419					
		6						
Enugu	13	2.4	0.6698					
	1	4						
Imo	10	2.4	0.6992					
	5	6						

A one-way analysis of variance (ANOVA) test was used to determine if there was significant difference between influences of teachers' pedagogical competence on implementation of pre-vocational studies curriculum across the five South-eastern states. The analysis revealed that there were no differences on the influences of teachers' pedagogical competence on implementation of prevocational studies curriculum in upper basic education across the five states of South-eastern Nigeria; Abia State (mean = 2.46, SD = 0.6481); Anambra State (mean = 2.46, S.D. = 0.7266); Ebonyi State (mean = 2.56, S.D = 0.7419); Enugu State (mean = 2.45, S.D. = 0.6698) and Imo State (mean = 2.46, S.D. = 0.6992).

The result presented in Table 3 also showed that there was statistically insignificant difference between the mean influences of teachers' pedagogical competence on implementation of prevocational studies curriculum in upper basic education across the five states of South-Eastern Nigeria; as determined by one-way ANOVA. The null hypothesis is accepted because F(4,523) = 0.544 is less than Fcritical = 2.37 and p = 0.703 is greater than 0.05 level of significant at 2, 526 degrees of freedom.

4.3.2 Hypothesis Two

Table 4: One-way ANOVA result on the influence ofsubject matter competence

On implementation of pre-vocational studies curriculum in upper basic education across the five states of South-eastern Nigeria

States	Ν	Меа	Std.	d.f.	fcalculate	fcritica	р –	Decision
		n	dev.		d	I	Value	
Abia	11	2.54	0.50754	2,	1.612	2.54	0.170	H0 is
	0			526				accept
Anambr	99	2.55	0.46097					
а								
Ebonyi	83	2.56	0.47152					
Enugu	13	2.61	0.49850					
	1							
Imo	10	2.45	0.44148					
	5							

SOURCE: Field Data

A one-way analysis of variance (ANOVA) test was used to determine if there was significant difference between influences of teachers' subject matter competence on implementation of pre-vocational studies curriculum in upper basic education across the five states of South-Eastern Nigeria. The analysis revealed that there are no differences on the influences of teachers' subject matter competence for effective implementation of prevocational studies curriculum in upper basic education across the five states of South-Eastern Nigeria; Abia State (mean = 2.54, SD = 0.50754); Anambra State (mean = 2.55, S.D. = 0.46097); Ebonyi State (mean = 2.56, S.D = 0.47152); Enugu State (mean = 2.61, S.D. = 0.49850) and Imo State (*mean* = 2.45, S.D. = 0.44148).

The result presented in Table 4 also showed that there was statistically insignificant difference between the mean influences of teachers' subject matter competence on implementation of prevocational studies curriculum in upper basic education across the five states of South-eastern Nigeria; as determined by one-way ANOVA.

5.0 Discussion of Findings

The findings on research question one revealed that prevocational teachers in five states of Southeastern Nigeria disagreed on the efficiency of teacher pedagogical competency in implementing the pre-vocational studies curriculum in upper basic education. A closer look at the data revealed that only pre-vocational studies teachers in Ebonyi State had a high mean of 2.51. Enugu's mean score of 2.45 differs somewhat from Abia, Anambra, and Imo States, which all have a mean score Of 2.46. The findings revealed that prevocational instructors in Ebonyi State had the highest mean, indicating that teacher pedagogical competency is effective in implementing the prevocational studies curriculum in upper basic education in the state. This finding is consistent with Anselmus (2011), who discovered that teachers' pedagogical competency has a significant impact on instructional design, evaluation of learning outcomes, and assisting learners to realize their potential. The finding from Ebonyi could be related to the fact that Ebonyi State, one of the South-Eastern states known in the past for being backward in various areas of development, with indigenes known for doing menial jobs, laborers, and having many outof-school children, experienced a drastic and tremendous change in the trend during the regime of ex-President Olusegun Obasanjo and ex-governor Sam Eqwu. This could also be attributed to the fact that from 2000 to the present, the state's successive governments have highlighted and continue to emphasize the importance of functional education through technical and vocational education, as well as skill acquisition for both students and teachers. The low mean scores in the other four states of Anambra, Abia, Enugu, and Imo could be attributed to the fact that prior to the revitalization and reintroduction of prevocational studies in upper basic education in Nigeria, there were few teachers for prevocational studies, resulting in less emphasis on special training and retraining of teachers in technical and vocational education by various state governments. This may explain why pedagogical competency was found to be ineffective in all four states. The hypothesis for this research question, however, revealed that there was no significant difference in the mean ratings of management and teachers regarding the effectiveness of pedagogical competence in the implementation of the pre-vocational curriculum in upper basic education across the five states of South-eastern Nigeria. The hypothesis's result is most likely due to the fact that teachers and management, who are key players in instructional activities, have similar perspectives on what constitutes teacher effectiveness in the instructional delivery process and how it influences or affects student success. This finding is supported by Ololube's (2013) assertion that, while teachers curricular content, implemented management supervised education and provided resources to help instruction. The results in Table 2 focused

On the extent to which subject matter competency influences the effective implementation of the prevocational studies curriculum in upper basic education in the five states of South-east Nigeria. A closer look at the results indicated that Enugu State had the highest mean score of 2.61, followed by Ebonyi, Anambra, and Abia State with mean scores of 2.56, 2.55, and 2.54, respectively, while Imo State had the lowest mean score of 2.45. According to the data, subject matter competency has a significant influence on upper basic education in four of the five states (Abia, Anambra, Ebonyi, and Enugu). However, Imo State's findings contrasted, indicating that subject matter competency had no influence on the implementation of prevocational studies. This finding is consistent with Obomanu's (2015) assertion that the teaching and learning of any school topic (particularly practical courses such as vocational and pre-vocational studies) should be carried out by professionally educated instructors with the necessary subject-area competencies. Similarly, the findings from research question two support Hakim's (2015) assertion that subject matter competence guides teachers in their ability to select relevant topics, instructional resources, logical presentation of lessons, and the use of appropriate techniques, all of which significantly promote efficiency in the teaching learning process. As indicated in the conceptual framework used to this study, the instructors' ability to deliver measurable educational results in a given sector of instruction is based on numerous elements, including mastery of subject matter.

6.0 Conclusion

12

The integration of pedagogical and subject matter expertise is vital for successful implementation of Prevocational studies curriculum As the educational system focuses on equipping students with practical skills for the job market, it is essential that teachers possess a thorough understanding of both the content they deliver and the teaching strategies that enhance students learning. The combination of pedagogical and subject matter competence is crucial for fostering an interactive atmosphere that encourages critical thinking problem-solving and the development of practical skills. The study recommends that:

01. government and management execute an action plan to improve teacher capacity in using modern pedagogy for effective implementation

- 01. of pre-vocational curriculum. Constant supervision of instruction should be encouraged to support professional growth and teacher effectiveness in the delivery of pre-vocational studies.
- 02. School administrators, ministries of education, and state secondary education boards should ensure that subject area experts are hired and deployed in schools. Management should always guarantee that professors are assigned to teach in their field of expertise.

References

Amie-Ogan, T. O. & Omunakwe, F. B. (2020). Perceived influence of teachers" quality on students" academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State, Nigeria. International Journal of Innovative Social & Science Education Research 8(3): 146-161 [Crossref][Google Scholar]

Amusan, M. A. (2016). Cultivating effective pedagogical skills in in-service teachers: the role of some teacher variables. *JISTE, 20(1), 83-89* [*Crossref*][*Google Scholar*]

Anselmus, S. (2011). Teachers' competency and students' performance. Timor East Musa Tenggara Province: Timor University Press. [Crossref][Google Scholar]

Akram, M. (2012). Formal education, skill development and vocationalization: The missing link. Research on humanities and social sciences, 2 (8), 142-148. [Crossref][Google Scholar]

Atsumbe, B. N., Raymond, E. & Mele, E. *F. (2012). Retraining needs of technical educators for the implementation of the junior secondary school basic technology programme in Nigeria, 1 (4), 7-13* [Crossref][Google Scholar]

Ayub, H. (2017). Parental influence and attitude of students towards technical education and vocational training. International Journal of Information and Education Technology. *7(7)* [Crossref][Google Scholar]

Aziz, F., & Akhtar, M. M. S. (2014). Impact of training on teachers' competencies at higher education level in Pakistan. Journal of Arts, Science & Commerce, 5(1) [Crossref][Google Scholar] Cubukcu, F. (2010). Student teachers' perceptions of teacher competence and their attributes for success and failure in learning. The Journal of International Social Research, 3(10). [Crossref] [Google Scholar]

Ebiringa, A. (2012). Perception of accounting teachers for the implementation of. social studies curriculum. *Department of education university of Nigeria Nsukka. Unpublished memography* [Crossref][Google Scholar]

Eche, N. P. & Nwankwo, I. N. (2011). Technical and vocational education: Road to sustainable development and poverty reduction in Nigeria. Journal of School of Vocational Education (JOVED), 1(1), 86-94 [Crossref][Google Scholar]

Ede, M. N. (2014). The fifth discipline and teachers' competence. *International Journal for Innovation Education and Research, 2(10) [Crossref][Google Scholar]*

Eneh, O. N. (2010) Artisanship Disconnect: Declining technical apprenticeship and artisan service and the implications for Nigeria's future development. Asian Journal of Industrial Engineering 2, 37-51. [Crossref][Google Scholar]

Fafunwa, B. A. (2003). Nigerian education: Yesteryears. Now and the Future. In Abayomi & D. Atilade (Eds.), State of education in Nigeria: [Crossref][Google Scholar]

Fafuwa, A. B. (2000). Teachers' education in Nigeria, West African Journal of Education,14(1). [Crossref][Google Scholar]

Federal Republic of Nigeria, (2012). Senior secondary school curriculum business studies: Abuja, NERDC Press. . Teachers' education in Nigeria, West African Journal of Education,14(1). [Crossref][Google Scholar] [Crossref][Google Scholar]

James, H. K. (2017). "Teacher competencies in Implementation of curriculum for learners with special needs in Kenyan Schools. *" IOSR Journal of Research & Method in Education (IOSR-JRME), 7(4),* 62–66 [Crossref][Google Scholar]

Hakim A. (2015). Contribution of competence teacher (pedagogical, personality, professional competence and social) on performance of learning. International Journal of Engineering and Sciences, 4(2), 1-12. [Crossref][Google Scholar]

Lent. R. W., Brown. S.D., & Hackett, A. (1994). Contextual supports and barriers to career choice: A Social Cognitive Analysis. Journal of Counseling Psychology. 48, 36-49. Dui. 10. 1037//0022-0167.1.36 [Crossref][Google Scholar]

Liakopoulou, M. (2011). The Professional competence of teachers: Which qualities, attitudes, skills and knowledge contribute to a teacher's effectiveness? Researcher Aristotle University of Thessaloniki Makedonomaxon 53, Halastra Thessaloniki, 57 300 GREECE. . [Crossref][Google Scholar]

MDG (2012). MDG Vision Statement. www. undp. org/mdgoverview on 25/04/14 [Crossref][Google Scholar]

Merriam, A. R. (2015). Fundamentals of Basic Technology education in Nigeria. *Britain: The Falmer Publishers [Crossref][Google Scholar]*

Miller, I. O., Bakare, J. A., & Ikatule, R. O. (2010). Professional capacity building needs of teachers for effective teaching of Basic Technology curriculum to students in junior secondary schools in Lagos State [Crossref][Google Scholar]

Mustafa, M. N. (2013). Professional competence differences among high school teachers in Indonesia. *International Education Studies, 6(9). [Article][Crossref][Google Scholar]*

Obomanu, B. J. (2015). Development of technical and vocational education and training (TVET) in Nigeria: The journey so far. A Keynote Address delivered at the 12th Annual National Conference of Historians of Education Development Society of Nigeria (HOEDSON) held at the University of Port Harcourt, Port Harcourt [Crossref][Google Scholar]

Ololube, N. P. (2013). Educational management, planning and supervision: model for effective implementation. *Owerri, Nigeria: Spring Field Publishers [Crossref][Google Scholar]*

Onsare, P. O. (2014). The pedagogical hindrances to oral communication skills in English in Kenya: a case of secondary schools in Kisii County. *Educational Research*, *4*(7) 536-542. [Article][Crossref][Google Scholar]

Oviawe, J. I., Ezeji, S. C. O.A., & Uwameiye, R. (2015). Comparative effectiveness of three methods on the academic performance of students in building technology in Nigerian polytechnics. European Scientific Journal, 11 (12), 274 – 285. www.eujournal.org/index.php/esj/article/view/5481 [Crossref][Google Scholar]

Ranija, R. Z. (2016). The structure of primary school teachers' professional competence. International Journal of Environmental & Science Education, 11(6), 1167-1173 [Crossref][Google Scholar]

Stavreva, S. V. (2013). The effects of usage of sequential teaching method on the academic achievement and retention level of learners in area of Biological Sciences or Biochemistry. *International Valorisation Conference "Key Methodology to Successful Competence Based Learning"* [Crossref] [Google Scholar]

UNESCO-UNEVOC (2012) Participation in formal technical and vocational education and training (TVET). . . The effects of usage of sequential teaching method on the academic achievement and retention level of learners in area of Biological Sciences or Biochemistry. *International Valorisation Conference "Key Methodology to Successful Competence Based Learning"* [Crossref][Google Scholar]

UNESCO (2020). School and teaching practices for the twenty-first century challenges: Lessons from the Asia-Pacific Region. Pairs, France. . [Crossref] [Google Scholar]

Disclaimer / Publisher's NoteThe statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of Journals and/or the editor(s). Journals and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.