

**TEACHERS' PROFESSIONAL QUALITIES AND STUDENTS' LEARNING
OUTCOMES IN PHYSICS IN CALABAR SOUTH LOCAL
GOVERNMENT AREA, CROSS RIVER
STATE, NIGERIA.**

BY

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ABSTRACT

The study examined Teachers' Professional Qualities and Students' Learning Outcomes in Physics in Ikom Educational Zone of Cross River State, Nigeria. To enhance this research study, two research questions and hypotheses were formulated, answered and tested for the study. The ex-post facto research design was employed for the study and the population for the study was respondents for the study were 1,690 physics students drawn from 8 public secondary schools from Ikom Educational Zone. A sample of 169 respondents were sampled representing 10% of the population of students in the educational zone chosen. The instrument used is the Teachers' Professional Skills Questionnaire (TPSQ). Twenty items were drawn for the questionnaire with a four-point modified Likert scale. The purposive sampling was employed in the study. The instrument was validated by experts in measurement and evaluation and physics respectively and the reliability coefficient was employed and the reliability indexed ranged from 0.78 to 0.86 which showed that the instrument was reliable for data collection. Findings showed that teachers' communication skills and teachers' levels of tolerance significantly influence students learning outcomes in physics. It was recommended that teachers should make a habit to have two ways to communicate whenever they are teaching and teachers should be tolerated in the class for effective teaching.

Keywords: Teachers' Professional, Qualities, Learning Outcomes and Physics

INTRODUCTION

In the teaching profession, professionalism is very vital for enhancing educational standards. This is based on the fact that teaching is the process of communicating concepts, facts, principles (knowledge) and skills, values and attitudes to a group of people or learners (Egwuasi&Okoro, 2011). Within the context of the school setting, when students are appropriately taught, the results of teaching are seen in the student's academic performance which in turn is a product of the teacher's professional qualities. A professional teacher can display a high level of pedagogical skills in lesson planning, effective communication, classroom management and classroom organization. Thus, the need for teachers to be highly professional in the teaching-learning process.

The issue of teachers' professional qualities has been an issue in the teaching profession where the teachers are required to display high command of the subject area taught. Most teachers lack the prerequisite skills and knowledge to teach effectively and efficiently in this global era where teaching has become digitalized. Thus as rightly noted by Ngada in Fajonyomi (2007) who posits that the success or failure of any educational programmer rests majorly on the adequate availability of qualified (professional), competent and dedicated teachers. To Seweje

and Jegede(2005) the ability of a teacher to teach is not derived only from one's academic background but, it is based upon outstanding Pedagogical skills acquired. Hence pedagogical (professional) qualities are indispensable if the teacher must maintain their union.

Akpan (2004) in agreeing with this observation stated that all these happen as a result of the fact that some of the teachers lack the basic professional qualities and the rudiments of teaching. Consequently, they are not effective and efficient in their teaching duty. Well-trained teachers prepare well and are ready to do work and be proud of its outcomes, and will not associate themselves with such inordinate acts. The realization of the national growth in technology as highlighted in the Nigeria National Policy on Education hinges (among others) largely on the quality of Physics teachers, this view is supported by Nkwodimahs (2003) submission that teachers are carriers of weaknesses. These weaknesses include, among others; inadequate exposure to teaching practice, poor classroom management and control, shallow subject matter and lack of professionalism all from Ajayi (2009) point of view, the professional skills of a teacher have to do with the following; Mastery of the subject matter, sense of organization, ability to clarify ideas, good imagination, ability to involve the students in meaningful activities throughout the period of teaching, management of the detail of learning

Tanguary (2019) explained that teachers are good communicators and contend that communication is the most effective teaching. Communication with students properly enables them to approach physics in a more enjoyable way that better support their learning, hence effective academic outcome. As classroom teachers, tolerance is very necessary for improved performance. Tolerance is a skill that deals with the ability to wait for the right time to act or respond in a given situation. It involves waiting for the event to occur without any negative emotions and responding to the situation positively. Tolerance is remaining cool, calm and collected in physics class. Tolerance skills provide a wide spectrum of information to students with extreme attention and listen to their quarries with tolerance. Teachers communicate in a variety of ways including verbal and written. Strong verbal communication means that teachers make their lesson material and expectations clear.

In the words of Ekpe and Eyong (2021) the teacher is one who imbibes the right culture (character and learning) expected in the society to the student they teach. This means that for the teacher to be a professional in his/her chosen discipline effectiveness must be the watch word. When a teacher is ineffective, there is the likelihood that the students will also be ineffective in the learned materials. Teachers as role models are directly or indirectly being emulated by the students they teach. It is not gainsaying to inform that most teachers at the primary, secondary and even tertiary institutions are lacking the skills (pedagogical competencies) on how to effectively teach their subjects (students).

Ikani, Eyong and Ejue (2019) study examined the Pedagogical Competencies of Teachers and Performance of Junior Secondary Students in Social Studies in Kontagora Local Government Area, Niger State, Nigeria. Three hypotheses were stated and tested in the study and the correlational research design was employed. The population of this study comprised three thousand one hundred and twenty-nine (3,129) lower basic I and II students and one hundred and ten (110) teachers from all the public and private secondary schools in Kontagora Local Government Area (LGA) of Niger State. The students were those that are currently in the 2017/2018 academic session. The sample size to be used for this study consists of one hundred and fifty-six (156) lower basic students representing 5% of the estimated sample of all lower basic I and II Social Studies students in public and private Secondary Schools in Kontagora LGA of Niger State. The stratified and simple random sampling techniques were used for the study



with two instruments designed by the researcher for data collection namely: the Teachers Assessment Form (TAF) and Lower Basic I and II Academic Performance Test (LBAPT) for the students to respond to. To ascertain the validity of the instruments: the Teachers Assessment Form (TAF) and the Lower Basic Academic Performance Test (LBAPT) was determined using construct and content validity: the instrument was given to three experts, two in Measurement and Evaluation and one in Social Studies Education from the University of Jos to scrutinize the items. The reliability of the TAF was established with a split-half reliability method using fifty (50) respondents drawn from the population. After the administration of the TAF, the coefficient of internal consistency was determined with a split-half reliability index which ranged from 0.78 to 0.93 respectively. Descriptive and inferential statistics were employed in this study and the three hypotheses were tested with Pearson's Product Moment Correlation and finding revealed that the level of competence of Social Studies teachers in classroom assessment competence, classroom arrangement and classroom interaction competence is high.

A study conducted by Khan, Khan, Zaiul-Islam and Khan (2017) on the communication skills of a teacher and their role in the development of student's academic success using 418 respondents forming 30% of each study 14 areas, using a questionnaire, data were collected using developed scale and analyzed using regression; Results obtained indicates that teacher communication skills have a significant role in the learning outcome of students. With communication skills, teachers learn to work with their students to develop their knowledge and critical thinking, hence an increase in their learning outcome in physics. Communication skills which involve listening, speaking, reading and writing help improve the relationship, increase understanding and model positive interactions.

The presentation of skills is an important part of tolerance the teacher and students help to be successful in different aspects of life. Explore the different presentation skills, including creating variety, considering tone and pace, and practicing and learning why these skills are important in the classroom. Tolerance allows students to learn what the teacher teaches. A study carried out by Sarah (2012) on an examination of tolerance and well-being measured three types of tolerance namely (interpersonal, life hardship and daily hustles tolerance) which differently relate to well-being and personality. The respondents used for this study were rated 10 personal goals and 15 dimensions of goal pursuit, the result obtained from the study shows that tolerance facilitated goal pursuit and satisfaction, especially in the face of obstacles, increase tolerance traits as well as decreased depression

The decision ought to be taken based on certain factors: the background of the learner, the teaching aids available, the age, maturity and readiness. When these factors are not properly selected, considered and combined in the lesson presentation process, a good plan lesson may not achieve much. they are learned this means a teacher who had no opportunity to learn them cannot apply them during lesson presentation Holmes (2014) learns from his experience with presentation trainers said a great experience with very engaged trainers the instructor giving out commands and learning the learner in activity session to discover knowledge. This implies that the mode of presentation of whatever is to be learned or appreciated has a whole-life effect. The skill commonly referred to includes though is not limited to these are pitching which is the tone of the teacher's voice, such as storytelling, persuading, enrolling, anxiety, and breaking motivating, and playing.

Every day, teachers make countless real-time decisions and facilities dozens of interactions between themselves and their students, although they share a commonality. Educators all over the country often talk about these decisions and interactions in different ways.

The classroom assessment scoring system (class), developed at the University of Virginia Center for advanced study of Teaching and Learning helps educators view the classroom through a common language, providing support for improving the quality of teacher-student interactions and ultimately, student learning. Emotional support refers to the ways teachers help students develop warm, supportive relationships experience enjoyment and excitement about learning to feel comfortable in the classroom and experience appropriate. It is based on this problem that teachers' professional qualities and students' learning outcomes in Physics in Ikom Educational Zone of, Cross River State, Nigeria.

Statement of the problem

Physics as one of the major science-related subjects is very useful as it helps students to have a better glimpse of how the world revolves. In our daily life expectancies, physics is used to describe the motion, forces, and energy of the ordinary experience. Individuals' experience from the study of physics can foster tasks such as walking, driving a car, or using a phone. Knowledge of physics is very vital in everyday situations as well as in non-scientific tasks. The general outcry of students' performance in physics is poor across the selected schools of the study. For instance, from 2017-2020 the overall performance has geometrically increased to 46% in 2017, 67% in 2018, and 75% in 2020 (Ministry of Education, 2020). This increase in performance may have an overall disaster on the general output of students. Adedayo (2008) reveals that the learning outcome of students in physics is very appalling, hence calling for attention. The consequence of this might result from teachers' professional skills in teaching secondary school students. All levels of education are suspected to be affected. The government, parents and even school administrators, including students, point accusing fingers at the teachers claiming their inefficiency in teaching the subject. This problem has lingered despite government efforts in equipping most school libraries with the needed facilities (modern books). It is on this note that the study seeks to examine Teachers' Professional Qualities and Students' Learning Outcomes in Physics in Ikom education zone Cross River State, Nigeria. Hence, the main crux of the research problem.

Purpose of the study

The purpose of this study is to investigate Teachers' Professional Qualities and Students' Learning Outcomes in Physics in Ikom Educational Zone of Cross River State, Nigeria. In specific terms, the study was anchored on the following objectives.

- 1 Examine the level of professionalism among teachers in Ikom educational zone
- 2 To find out the influence of the teachers' communication skills on students' learning outcomes in physics.
- 3 To find out the influence of teachers' tolerance skills on students' learning outcomes in physics.

Research questions

The following research questions were generated to guide the study:

1. What is the level of professionalism among teachers in Ikom educational zone?
2. What is the influence of teachers' communication skills on students' learning outcomes in physics?



3. What is the influence of teachers’ tolerance skills on students’ learning outcomes in physics?

Hypotheses

The following hypotheses are stated for the study

1. There is no significant influence of teachers’ communication skills on students’ learning outcomes in physics.
2. There is no significant influence of the teacher’s level of tolerance on students’ learning outcomes in physics.

RESEARCH METHODOLOGY

The study aimed at examining Teachers’ Professional Qualities and Students’ Learning Outcomes in Physics in Ikom Educational Zone of, Cross River State, Nigeria. The research design used in this study was the ex-post facto research design. The ex-post facto research design by Kerlinger (2009) describes ex-post factor research design as a systematic empirical inquiry in which the research does not have direct control of the independent variable because their manifestation has already occurred or because they are inherently not manipulated. The population for the study was respondents the study was 1,690 physics students drawn from 8 public secondary schools in Ikom Educational Zone. A sample of 169 respondents were sampled representing 10 of the population of students in the educational zone chosen. The instrument used is the Teachers’ Professional Skills Questionnaire (TPSQ). Twenty items were drawn for the questionnaire with a four-point modified Likert scale. The purposive sampling was employed in the study. This became necessary because the researcher only considered students who are offering physics in the selected school. The instrument was validated by experts in measurement and evaluation and physics respectively and the reliability coefficient was employed and the reliability indexed ranged from 0.78 to 0.86 which showed that the instrument was reliable for data collection. Findings showed that the level of professionalism among teachers is significantly low, teachers’ communication skills and teachers’ level tolerance significantly influence students learning outcomes in physics in physics. It was recommended that teachers should make a habit to have two ways to communicate whenever they are teaching and teachers should be tolerated in the class for effective teaching.

Presentation of results

This section covers data analysis based on each question formulated for the study. The variables are identified so also the statistical tool is used in analyzing the results.

Research Question one

What is the influence of teachers’ communication skills on students’ learning outcomes in physics? The independent variable is teachers’ communication skills, while the dependent variable is students learning outcomes in physics in Physics. Mean rating and standard deviation are used to test the results. The result of the analysis is presented in Table 1.

Table 1: Mean and standard deviation of respondents on communication skills on student’s learning outcome in physics in Ikom Educational Zone.

S/N	TEACHERS’ COMMUNICATION SKILLS	\bar{X}	S.D	Remark
1.	I learn better with the way my teacher communicates	3.99	2.34	Agreed



	with me			
2.	My teacher’s teaching influence my study habit	3.90	0.45	Agreed
3.	It helps me to air my view	3.88	0.30	Agreed
4.	I understand my teacher when he/she teaches	4.00	0.50	Agreed
5.	My teacher makes teaching simple for us	3.77	0.64	Agreed
6.	My teacher helps me to develop critical thinking	3.68	0.73	Agreed
7.	It helps me to understand my teacher’s likes and dislikes	3.80	0.53	Agreed
8.	Helps me to update my knowledge	2.29	1.06	Disagreed
9.	Helps us to have good classroom management	3.81	0.57	Agreed
10.	It brings about effective learning	3.81	0.57	Agreed

The result in Table 1, shows that a mean score of 3.99 agreed with the statement that the respondents learn better with teachers’ communication. Respondents agreed with the statement that their teacher’s teaching influence their study habits with a mean score of 3.90. A mean score of 3.88 indicates that respondents use communication to air their views while respondents with a mean score of 4.00 agreed that they understand their teacher. Another group of respondents with mean scores of 3.77 agreed that their teacher makes learning material clear. Those respondents with a mean score of 3.68 indicate that their teacher help them to develop critical thinking, while another group with a mean score of 3.80 agreed that they can understand their teacher’s likes and dislikes. Respondents with a mean score of 2.29 disagreed with the statement that can upgrade their knowledge. Respondents with a mean score of 3.81 agreed with the statement that they have good classroom management due to communication skills and a mean score of 3.81 shows that respondents agreed that communication enables them to have effective learning outcomes in physics.

Research question 2

What is the influence of teacher tolerance skills on students’ learning outcomes in physics? The independent variable is teacher-student interaction, while the dependent variable is students learning outcomes in physics in Physics. Mean rating and standard deviation are used to analyze the results. The results of the analysis are presented in Table 2.

Table 2: Mean and standard deviation of the respondents’ teacher’s level of tolerance and student’s learning outcome in physics in Ikom Educational Zone

S/N	TEACHERS’ TOLERANCE SKILLS	\bar{X}	S.D	Remark
11.	My physics teacher gives us enough time to think before responding to issues	3.46	0.81	Agreed
12.	My teacher is always tolerance and not harsh to us	2.41	0.35	Disagreed
13.	My teacher gives us tips on how to accept set back	3.59	0.79	Agreed
14.	My teacher always advises us on how to achieve success	3.51	0.59	Agreed
15.	I have learned how to preserve and make productive decisions	3.35	0.10	Agreed
16.	I have learned how to take part in activities that force me to wait	3.69	0.58	Agreed
17.	My teacher taught us to be calm and always	3,51	0.70	Agreed

18. My teacher's tolerance skills have helped me to improve my communication skills	3.22	0.94	Agreed
19. I have achieved long-term success due to waiting	3.71	0.67	Agreed
20. With the tolerance of my physics teacher, I have achieved success in learning new things	2.19	0.79	Disagreed

From Table 2, the item statement on teachers giving enough time for students to respond to issues have a mean score of 3.46, while those who accepted their teachers' tolerance with them disagreed with a mean score of 2.41. A mean score of 3.59 agreed that their teachers give them tips to accept set back, while another group with a mean score of 3.51 agreed that have learned to preserve. Respondents with a mean score of 3.35 agreed that they are advised to achieve success. Respondents with a mean score of 3.69 agreed that they take part in activities that make them wait, while those with a mean score of 3.51 agreed that they are normally calm. A mean score of 3.22 show that the respondents agreed that they can communicate properly. Respondents with a mean score of 3.71 agreed that they have achieved success. Respondents with a mean score of 2.19 disagreed with the fact that they have achieved success with the level of teachers' tolerance.

Test of hypotheses

Hypothesis 1

There is no significant influence of teachers' communication skills on students' learning outcomes in physics. The One way ANOVA was used in the study and the results are presented in Table 3.

Table 3
1 Way ANOVA with learning outcome in physics
on teachers' communication skills

Levels of communication	N	Mean	Std. Deviation	Std. Error	Maximum
High	58	17.9310	5.08131	.66721	35.00
Moderate	39	13.3846	4.29575	.68787	24.00
Low	66	16.6515	5.03371	.61961	26.00
Total	163	16.3252	5.16025	.40418	35.00

Sources of variance	Sum of Squares	df	Mean Square	F-value	p-value
Between Groups	493.827	2	246.914	10.342	.000
Within Groups	3819.940	160	23.875		



Total	4313.767	162
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*p<.05

Table 3 shows the results with one-way ANOVA of the learning outcome in physics on teachers' communication skills. From the analysis, the p-value was found to be .000 which was accompanied by an F-value of 10.342. Thus the null hypothesis was rejected. This implies that there is a significant influence of teachers' communication skills on students' learning outcomes in physics. See the area of significance in the post-hoc comparison in Table 4.

Table 4: Fishers LSD for learning outcome in physics on teachers communication skills

Teachers communication quality	Learning outcome in physics	Mean Difference (I-J)	Std. Error	Sig.
High	Moderate	4.54642*	1.01183	.000
	Low	1.27952	.87941	.148
Moderate	High	-4.54642*	1.01183	.000
	Low	-3.26690*	.98687	.001
Low	High	-1.27952	.87941	.148
	Moderate	3.26690*	.98687	.001

*. The mean difference is significant at the 0.05 level.

Hypothesis 2

There is no significant influence of teachers' tolerance skills on students' learning outcomes in physics. The independent t-test is used for analyzing the data. The results are shown in Table 5.

Table 5
1 Way ANOVA with learning outcome in physics on teachers' level of tolerance

Level of Teachers' Tolerance	N	Mean	Std. Deviation	Std. Error	Maximum
High	43	18.1860	4.94376	.75392	35.00
Moderate	69	16.0145	5.79171	.69724	26.00
Low	51	15.1765	3.95831	.55427	25.00
Total	163	16.3252	5.16025	.40418	35.00

Sources of variance	Sum of Squares	df	Mean Square	F-value	p-value.
Between Groups	222.858	2	111.429	4.358	.014
Within Groups	4090.909	160	25.568		
Total	4313.767	162			



*p<.05

Table 4 shows the results with one-way ANOVA of the learning outcome in physics on teachers’ communication skills. From the analysis, the p-value was found to be .014 which was accompanied by an F-value of 4.358. Thus the null hypothesis was rejected. This implies that there is a significant influence of teachers’ level of tolerance on students’ learning outcomes in physics. See the area of significance in the post hoc comparison in Table 6.

Table 6: Fishers LSD for learning outcome in physics on teachers communication skills

Level of tolerance	Learning outcome in physic	Mean Difference (I-J)	Std. Error	p-value
High	Moderate	2.17155*	.98243	.028
	Low	3.00958*	1.04687	.005
Moderate	High	-2.17155*	.98243	.028
	Moderate	.83802	.93375	.371
Low	High	-3.00958*	1.04687	.005
	Moderate	-.83802	.93375	.371

*. The mean difference is significant at the 0.05 level.

Discussion of findings Teachers’ communication skills and students learning outcomes in physics.

The results of the study show that teachers’ communication skills significantly influence students learning outcomes in physics in physics. The result shows students learn better with the way that their teacher communicates with them. The respondents responded positively that their Physics teacher influence their teacher habits. Also, respondents agree that they can air their views and that they understand their teachers. The majority of the respondents indicate that their teacher makes lessons clear and they can develop critical thinking. They are also able to understand their teacher’s likes and dislikes. The respondents agree that their knowledge is updated. The findings agree with the study of Gagnon (2019) who found that teachers’ communication skills can make a world difference in the life of students, from classroom learning to long-term success.

Teachers’ tolerance skills and Students’ learning outcome in Physics

The findings on teachers’ tolerance show a significant influence on students learning outcomes in physics in Physics. Since the respondents agree with the statement, it shows that they have enough time to think before responding to issues. The respondents agreed that their teachers give them tips on how to accept set back and preserve to make productive decisions. The respondent also agreed that they have learned how to take part in activities that force them to wait and be calm always. They also agreed that due to the tolerance of their teacher, they can communicate properly and achieve success due to long-term waiting.

Summary and conclusion

Teachers are very useful in the teaching process. This is because they are role models and can foster the child’s intellectual capacity. The quality of teaching is a critical factor in promoting meaningful learning in schools. How effective this could depend on proper lesson planning and teacher-student interactions. This study sought to fill the gap in teachers’

communication and level of tolerance which has limited literature on them. It helps to create awareness of basic professional skills expected of teachers to improve students' learning outcomes in physics in physics. It can be concluded from the results that;

1. Teachers' communication skills significantly influence students learning outcomes in physics.
2. Teachers' level of tolerance significantly influence students learning outcome in physics.

Recommendation

The recommendations of the study as drawn from the findings are shown below

1. Teachers should always make it a habit to always communicate properly with their students' whenever there are teaching them.
2. Teachers should be tolerated in the class for effective teaching to take place.

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