

Influence of Teacher Characteristics on Physics Students' Academic Achievement in Secondary Schools in Khana and Gokana Local Government Areas of Rivers State

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Abstract

The study investigated the influence of teacher characteristics on physics students' achievement in secondary schools in Khana and Gokana local government Area. Five research questions were formulated to guide the study and five hypotheses were tested for the study. The descriptive survey research design was adopted with a population of 1887. A sample of 553 was drawn with the aid of Krejcie and Morgan, out of which 20 were principal, 291 khana students, and 242 Gokana students. The instrument titled Influence of Teachers Characteristics on Physics Students Academic Achievement was used to elicit information from the respondents. The questionnaire was coded using 4 point rating scale of Strongly Agreed, Agreed, Disagreed and Strongly Disagreed. The instrument was duly validated by experts, while the Cronbach Alpha method of reliability was employed and it yielded the following indices: cluster one 0.75, cluster two 0.81, cluster three 0.67, cluster four 0.79, and cluster five 0.87. The research questions were answered using means and standard deviation, while the hypotheses were tested using z-test statistics at 0.05 level of significance. The results showed that; Teachers' qualification promotes academic achievement among physics students; teachers' attitude do not really influence academic achievement among physics students; teacher's experience actually influenced academic achievement among physics; teacher's gender also influences academic achievement among physics students, and that teacher's age has no significant effect on academic performance of physics students in Khana and Gokana local government area. And recommended that: teachers should be given the opportunity to further their studies in order to increase their knowledge in physics; all teachers are role models and as such, expected to put up

the best behaviour in the classroom; experience as usually said, is the best teacher, therefore teachers should explore themselves base on life experiences; every teacher should ad held to the morals operandi of the teaching profession both in dressing and in speech, and that aging is never a barrier in teaching. Meanwhile, both old and young should be given a chance to exhibit their hidden potentials.

Key Words: *Academic, Achievement, Characteristics, Influence, and Physics.*

Introduction

Science is recognized as being of great importance internationally both for economic well-being of nations and because of scientifically literate citizenry. Knowledge of science and technology is also a requirement in all countries and all people globally due to the many challenges that people are faced with. These challenges include emergencies of ecological impact of modern technology, energy crisis, global warming and climate change among others (Minishi, Muni, Mutai, Munyeye & Omolo, 2004).

Physics is a nature of science that is based on experiments, measurements and mathematical analysis with the purpose of finding quantitative physical laws for everything within and outside the environment. Physics is the study of matter and natural events, based on empirical observations and quantitative measurements. Many technical or basic tools and equipment surrounding us work according to the laws of physics. It is a subject that requires the processes of science to understand the theoretical concepts and their applications in solving everyday life problems. Also, the importance of physics to the society is evident in man's reliance on technology. In other words, the indices of development of any country are Physics-based technologies. This is evident in the level of students' enrolment and achievement in physics in school based and external examinations. (Pravica, 2005).

Physics prepares students for vocational careers at tertiary levels of learning and in life generally. Physics as a subject is like a pivot joint in the Nigeria Secondary Schools Curriculum; since other subjects such as Chemistry, Biology and Geography depend on it (Otieno, 2009). In Nigerian secondary schools, students study physics as a subject for three years, which is senior secondary school (SSS) as stipulated in the National Policy on Education (FRN, 2013). Teachers at secondary school level are required to engage students in practical words involving conducting experiments, with the aims of developing their scientific knowledge and experimental skills, and at the same time arousing, sustaining interest and cultivating their attitude positively to physics and physics related phenomena. It has been the interest of the science education community not only to determine what students should be learning in science lessons or the assessment as to whether or not students are actually learning but also, "the how" in terms of what approaches teachers use that would ensure maximum understanding and effective lesson delivery (Adolphus, Ekineh & Aderonmu, 2020). Jepsen (2015) notes that teachers have strong influence on learner achievement. He says that teacher characteristics are key in determining the academic achievement of learners especially in early years of learning. In his study on teacher characteristic and student achievement, he noted that teacher's educational background and teaching experience are key determinants of learner academic achievement. These finding concur

with those of Buddin and Gema (2009) who did a study in Los Angeles, California on the relationship between teacher qualifications and student achievement in urban elementary schools. They found large difference in teacher quality where some teachers were high qualified academically while others were not. However, the findings indicated that learner academic achievement was not influenced by teacher qualifications. This implies that other factors also play a role in determining learner academic achievement in different subjects.

Teachers Qualification and Student Academic Achievement

Darling-Hammond (1998) defined well qualifying teacher as one who was fully certified and held the equipment of a major in the field being taught although the formal qualification of teachers is an important indicator for their knowledge and competence in teaching. It has only limited utility in analyzing how well prepared teachers are for what they have to teach in school. More detailed knowledge of the courses they have taken during their training needs to be compared to the actual content and skills required to teach the high school's subject. Ruthland and Bremer (2002) refer to teachers' qualification in two ways, traditional and alternative qualification routes. Traditional qualification is when an individual completes an under-graduate degree or post graduate program in education. Alternative routes of qualification are based on coursework in pedagogy and subject area with a degree in education. Hardy and Smith (2006) cite short term activities such as mentoring, peer evaluations and workshops are other ways than formal qualification for improving teaching, and more often graduates with first degree content go into teaching if they cannot find another job right away. Although they often get somewhat lower salary than a fully qualified teacher; they choose not to enroll in the one-year post-graduate professional training and therefore lack a basic foundation for teaching.

Teaching Attitude and Student Academic Achievement

Abundant research supports the notion that teacher support has clear implications for students' emotional well-being (hereafter called well-being). Consistent with previous research. We conceptualize well-being as comprising positive and negative effect (Possel, Rudasill, Adelson 2013). Positive affect is the extent to which a person typically feels positive emotion (example is enthusiastic, active and alert). Negative affect encompasses frequent negative feelings (example is distressed, angry nervous). Well-being is not only of subjective importance for students; negative effect is associated with academic problem including reduced homework completion, less concentration in class, fewer interactions with peers, poorer class attendance, and lower rates of post- secondary degree attainment (Humensky, Kuwabara, Fogel, Wells, Goodwin & Van Voorhees, 2010).

Research has shown that teacher support plays an important role in students' overall wellbeing for example, student who feel supported by their teachers are more likely to also feel safe and relaxed in class than their peers who reported feeling unsupported (Furrer & Skinner, 2003). Students who perceive their teachers as supportive also tend to report better psychological adjustment (Van Ryzin Gravely & Roseth 2009). More positive effect and life satisfaction (Sudo Shaffer, & Riley 2008). Collectively, results from these studies point to the important of investigating what specific teaching behaviors are associated with well- being in students. Multiple models of teaching attitude converge in the conceptualization of three components. Each of which has been associated with student academic and social success (Hamre & Pianta,

2008; PeryoDonohve, & Weinstain 2007). Although, classroom observation is the gold standard for measuring teaching behavior, although cost effective may not be accurate reflections of teaching behavior (Douglas 2009). And some research suggests that students' perceptions of their teachers' behavior maybe more valuable then third-party observe reports for understanding student outcome (Eccles, Midgley, Buchaman, Wigfield Reuman & Maclver 1993). Teaching behavior that is instructionally supportive (providing opportunities for student to respond, to choose or to receive position feedback) promotes academic achievements (CurbyRudasill, Edwards, & Perez, 2011). Organizational strategies designed to increase students time on task and decrease disruption have been limited to increase student engagement and more productive use of available instructional time across the school year (Gou et al; 2015). While a multiple of studies has examined the influence of teachers on students (Crosnoeetal, 2004, ElsenHower Baker, & Blacker, 2007), most studies asses teaching behavior via teacher reports or classroom observation each of which has its own strengths and weakness (Douglas, 2009). Although classroom observations by trained observers are gold standard for measuring teaching behaviors, these required ample investments of time and money (Douglas 2009) in addition, classroom observations that measure quantity, rather than quality of teaching behaviors vary widely within teachers, suggesting that multiple observation may be necessary to capture typical behaviors (Croninger & Valli, 2009). Thus, instruments measuring teaching behavior using external observes are limited by practical consideration such as cost and time (for training), travelling to schools, observation, teachers reports of teaching behavior are must less expensive than classroom observations yet these are plagued with problem of self-rating bias.

Teachers Experience and Student Academic Achievement

Experienced teacher has a richer background of experience to draw from and can contribute insight and ideas to the course of teaching and learning. Teachers are open to correction and are less dictatorial in classroom. teacher experience and students' achievement was that student taught by more experienced teachers achieve at a higher level, because their teachers have mastered the content and acquired classroom management skills to deal with different types of classroom problems (Gibbon et al, 1997). Furthermore, more experienced teacher are considered to be more able to concentrate on the most appropriate way to teach particular topics to student who different in their abilities, prior knowledge and background (Stringfield & Teddlie, 1991). Teachers motives to attend in-service training can be manifold e.g increase in salary, career planning, keep up with developments, filling in lacunae, removing insecurity and meeting colleagues. Indeed, research on teaching experience on student academic achievement is generally inconsistent (Blomeke et al. 2016; Rice, 2010).

Adding to the controversy regarding the contribution of experience to teacher effectiveness is the argument that teacher education programs may be equivalent to the effects of early careers experience (Darling-hammond, 2000). As Darling-Hamond (2014) explain longer periods of teaching experience within teacher education program allow for possibilities to apply theoretical knowledge during classroom teaching practice this combination of theory and practice can mean that recently graduated teachers' education students are as effective as their more experience colleagues. Teachers self-efficacy beliefs are considered to be an important aspect of teacher competence, influencing teachers' instructional behaviors' and student motivation (Klassen & Tze, 2014; Betts & Gordon, 2011). At the same time, teacher self-efficacy research has suffered from theoretical and conceptual confusion (Hensen, 2002). Therefore, the number of researchers

has called for more evidence on the link between teachers' self-efficacy and student learning outcomes at the classroom level (Wheatly, 2005; Wyatt, 2014, Zee & Koomen, 2016). It is worth nothing that in studies following bandura's theoretical guidelines for the conceptualization and measurement of teacher self-efficacy, only a modest association of teacher self-efficacy with student achievement was found (Henson, 2002, Klassen et al., 2011, Wyatt, 2014). A further scrutiny of these studies reveals a lack of domain and grade-specific instruments, thus questioning the assumption of a link between the two (Zee & Koomen, 2016).

Moreover, a number of researchers have stressed the importance of exploring teacher knowledge and skills together with teacher's belief. For example, Rauden, Rowan, and Cheong (1992) contend that self-efficacy is an important, but not sufficient, factor for successful teaching, as teachers may lack the necessary knowledge and skills to enact their beliefs. In addition, in order to understand teacher knowledge, beliefs are connected to student learning, we might first need to understand how they are translated into teacher behavior, and lead to instructional quality (Fives & Buehl, 2012). Instructional quality has been explored as a mediating variable between teacher's knowledge and student outcome (Kunter et al, 2013). Similar to indicators of teacher competence, instructional quality should be studied in relation to study grade and subject matter taught (Scherer & Gustafsson, 2015). Besides dependent on contextual factors, instructional quality is also contingent on the national educational setting, such as the structure of educational system, the national curriculum and the organization of teacher education (Weinert et al, 1989).

Statement of the Problem

The importance of physics in a world of science and technology cannot be overemphasized. Scientist utilize the knowledge of physics to make significant contributions through advances in new technologies for example, advances in the understanding of electromagnetism and nuclear physics led directly to the development of new products which dramatically transformed modern-day society devices, such as television, computer, domestic appliances and nuclear weapons. The level of achievement of students in physics in these examinations is of much concern to government, educationists and researchers in the field of physics education (Adegoke, 2010). Although, the achievement of physics students in WAEC examinations (May/June) from 2007 to 2014 improved in some years (51% in 2010, 64% in 2011, 69% in 2012 and 60% in 2014). The pass percentage was average throughout this period, but poor achievement was observed between 2007, 2008, 2009 and 2013 respectively. And the low popularity of physics subject among secondary school students compared to biology and chemistry can be attributed to many factors including teacher's characteristics such as content knowledge, experience, behaviour, gender, age and so on.

Many studies have been conducted on teacher's characteristics and physics student's achievement (Adolphus & Aziaka, 2020; Kiruki & Orodho, 2015; Kosgeiet *al.*, 2013), yet the problem of poor academic achievement among physics students in Khana and Gokana keep erupting. It is as a result of this foregoing that this study is been carried out.

Purpose of the Study

The purpose of this study was to investigate the influence of teacher characteristics on physics student's achievement in secondary schools in Khana and Gokana local government Area. Specifically, the study sought to:

1. Examine the influence of teacher's qualification on physics student's achievement in Khana and Gokana local government Area.
2. Determine the influence of teachers attitude on physics student's achievement in Khana and Gokana local government Area.
3. Investigate the influence of teacher's experience on physics student's achievement in Khana and Gokana local government Area.

Research Questions

This was guided by the following research questions:

1. Does teacher's qualifications influence student's achievement in physics?
2. Does teacher's attitude influence student's achievement in physics?
3. Does teacher's experience influence student's academic achievement in physics?

Hypotheses

The following null hypotheses were tested for this work at 0.05 level of significance

1. There is no significant difference in the mean rating between Khana and Gokana on how teachers' qualifications influence student's academic achievement in physics in Khana and Gokana LGA.
2. There is no significant difference in the mean rating of respondents on the extent to teacher's attitude influence students' academic achievement in physics in Khana and Gokana LGA.
3. There is no significant difference in the mean rating of respondents on the extent to which teachers' experience influence student's academic achievement in physics in Khana and Gokana LGA.

Methodology

The study adopted descriptive survey design and was carried out in Khana and Gokana local government area respectively with a population of 1887, out of which 553 was chosen as the sample size. This was drawn from the accessible population with the aid of Krejcie and Morgan sample size determination table (1970), while the simple random sampling technique was used in selecting the respondents. The instrument was a questionnaire titled: Influence of Teachers Characteristics on Physics Students Academic Achievement (ITCPSAA). The 35 items was coded using the modified four (4) points rating scale of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). The questionnaire was well validated by experts in the field of Measurement and Evaluation, while Cronbach Alpha method of tested reliability was employed and the results yielded the following reliability indices: cluster one 0.75, cluster

two 0.81, cluster three 0.67, cluster four 0.79, and cluster five 0.87. The research questions were answered using mean and standard deviation. A decision rule was taken on a criterion mean value of (2.50). Above 2.50 were considered strongly agree or agree, while 2.49 below were considered disagree or strongly disagree. While the hypotheses were analyzed using z-test statistics at 0.05 level of significance.

Results and Discussion

Research Question 1: Does teacher’s qualifications influence student’s achievement in physics?

Table 1: Mean Response on how Teachers’ Qualifications Influence Student’s Achievement in Physics.

S/N	Items	Khana Principal (10)		Decision	Gokana Principal (10)		Decision
		\bar{x}_1	SD ₁		\bar{x}_2	SD ₂	
1.	Students perform better when they are taught by qualified physics specialist teachers	3.70	0.72	SA	3.30	0.87	A
2.	Students taught by teachers with first or higher degree perform better than those taught with lower qualification.	3.60	0.99	SA	3.50	0.95	SA
3.	Teachers with excellent subject content knowledge are more effective in classroom than teachers without excellent content subject knowledge.	2.20	0.73	D	2.70	0.72	A
4.	Students taught by teachers with professional recognition perform better than those without professional recognition.	2.30	0.71	D	3.40	0.91	A
5.	Teachers with professional teaching qualification have better students’ assessment, evaluation, and strategies and so produce students with better achievement.	3.80	1.08	SA	3.90	1.13	SA
6.	Qualified physics teachers have more freedom to try innovative methods for better learning and improvement of students’ achievement.	3.20	0.83	A	2.90	0.57	A
7.	Qualified physics teacher provide individual attention to students with special needs which enhances students’ achievement.	3.60	0.99	SA	3.80	1.08	SA
Grand Mean		3.20	0.86	A	3.36	0.89	

Source: Field Survey, 2022.

In Table 1 above, research question one reveals that Khana and Gokana principals has means score of 3.20 and 3.36 respectively, that are greater than the criterion mean value of 2.50. This indicated that teacher's qualification actually influenced student's academic achievement in physics.

Research Question 2: Does teacher's attitude influence student's achievement in physics?

Table 2: Mean Response on how Teachers' Attitude Influence Student's Achievement in Physics.

S/N	Items	Khana Students (291)		Decision	Gokana Students (242)		Decision
		\bar{x}_1	SD ₁		\bar{x}_2	SD ₂	
1.	Physics teacher that have a positive attitude towards student promotes students achievement.	1.59	0.91	D	1.77	0.84	D
2.	A physics teacher that presented information in a way that is easy to understand enhances student achievement.	2.68	0.72	A	2.70	0.72	A
3.	Physics teachers care about students' academic and social wellbeing and it influences student achievement.	2.11	0.75	D	2.03	0.77	D
4.	Physics teachers uses various cultural activities in the lessons like experimentation, case studies, lives examples and it improve achievement of student	1.93	0.79	D	1.76	0.85	D
5.	Physics teachers encourage student feedback and it promotes their achievement.	3.11	0.80	A	3.20	0.86	A
6.	Physics teachers provide high and clear expectations for student academic achievement	1.59	0.91	D	1.80	0.83	D
7.	Physics teacher acknowledge students effort through recognition and appraisal and it enhances their achievement	2.02	0.77	D	1.84	0.82	
Grand Mean		2.15	0.81	A	2.16	0.81	D

Source: Field Survey, 2022.

In Table 2 above, research question two demonstrated that Khana and Gokana students has means score of 2.15 and 2.16 respectively, that are less than the criterion mean value of 2.50. This implies that teacher's attitude does not influenced student's academic achievement in physics.

Research Question 3: Does teacher’s experience influence student’s academic achievement in physics?

Table 3: Mean Response on Teacher’s Experience Influence Student’s Academic Achievement in Physics.

S/N	Items	Khana Students (291)		Decision	Gokana Students (242)		Decision
		\bar{x}_1	SD ₁		\bar{x}_2	SD ₂	
8.	Teachers with more years of experience do better in disseminating knowledge to their students and it influence students’ achievement.	3.22	0.84	A	3.24	0.84	A
9.	Teachers with more years of teaching experience have better knowledge to teach their student and it enhances students’ achievement.	2.89	0.78	A	3.05	0.79	A
10.	Students taught by more experienced teachers perform academically better and influence students’ achievement.	2.96	0.77	A	3.14	0.81	A
11.	Experienced teachers are the best source of information when students have question to ask and it enhance students’ achievement.	3.30	0.87	A	3.61	0.99	SA
12.	Experienced teacher are more problem solving and analytical and it enhance students achievement.	3.03	0.78	A	3.13	0.82	A
13.	Experienced teachers have more control over classroom management and promotes student’s achievement	3.86	1.11	SA	3.19	0.83	A
14.	Experienced teacher have better students assessment and evaluation that improves students’ achievement	3.26	0.88	A	3.24	0.84	A
	Grand Mean	3.26	0.88	A	3.23	0.85	A

Source: Field Survey, 2022.

In Table 3 above, research question three has means score of 3.26 and 3.23 that are both greater than the criterion mean value. This shows that there is uniformity in the means score of Khana and Gokana students on how teacher’s experience influence academic achievement of physics students.

Test of Hypotheses

Hypothesis 1: There is no significant difference in the mean rating between Khana and Gokana principals on how teachers’ qualifications influence student’s academic achievement in physics in Khana and Gokana LGA.

Table 4: Analysis of Hypothesis One using Z- Test Statistics

Respondents	N	\bar{x}	SD	Z-cal.	Z-crit.	Sig.	Decision
Khana Principals	10	3.20	0.86	0.41	± 1.96	0.05	Not significant
Gokana Principals	10	3.36	0.89				

Source: Field Survey, 2022 z-cal. < z-crit. Significant at alpha level (Two tailed)

The Table 4. above shows that, the z-calculated 0.41 is less than z-critical value ± 1.96 at 0.05 level of significance. This means that, there is no significant difference in the mean rating between Khana and Gokana principals on how teachers' qualifications influence student's academic achievement in physics in Khana and Gokana LGA. Therefore, the null hypothesis was accepted.

Hypothesis 2: There is no significant difference in the mean rating of respondents on the extent to teacher's attitude influence students' academic achievement in physics in Khana and Gokana LGA.

Table 5: Analysis of Hypothesis Two using Z- Test Statistics

Respondents	N	\bar{x}	SD	Z-cal.	Z-crit.	Sig.	Decision
Khana Students	291	2.15	0.81	0.14	± 1.96	0.05	Not significant
Gokana Students	242	2.16	0.81				

Source: Field Survey, 2022 z-cal. < z-crit. Significant at alpha level (Two tailed)

Table 5 above reveals that, the z-calculated is greater than 0.14 $< \pm 1.9$ at 0.05 level of significance. This implies that, the differences between the mean rating of Khana and Gokana students on how teacher's attitude influence students' academic achievement in physics was not significant at 0.05. Meanwhile, the null hypothesis was accepted.

Hypothesis 3: There is no significant difference in the mean rating of respondents on the extent to which teachers' experience influence student's academic achievement in physics in Khana and Gokana LGA.

Table 6: Analysis of Hypothesis Three using Z- Test Statistics

Respondents	N	\bar{x}	SD	Z-cal.	Z-crit.	Sig.	Decision
Khana Students	291	3.26	0.88	0.39	± 1.96	0.05	Not significant
Gokana Students	242	3.23	0.85				

Source: Field Survey, 2022 z-cal. < z-crit. Significant at alpha level (Two tailed)

Table 6 above indicated that, the z-calculated 0.39 is less than ± 1.9 critical level at 0.05 level of significance. This shows that, the differences between the mean rating of Khana and Gokana

students on how teachers' experience influence students' academic achievement in physics was not significant at 0.05. Thus, the null hypothesis was accepted.

Discussion of Findings

The Extent to which Teacher's Qualification Influenced Student's Academic Achievement in Physics

Research question one reveals that teacher's qualification actually influenced student's academic achievement in physics with means score of 3.20 and 3.36 respectively, that are greater than the criterion mean value of 2.50. Hypothesis one was accepted where z-calculated 0.41 was less than z-criticalvalue ± 1.96 at 0.05 level of significance. This signifies that there was no significant difference in the mean rating between Khana and Gokana principals on how teachers' qualifications influence student's academic achievement in physics in the two LGA. No wonder Darling-Hammond (1998) posits that well qualifying teacher as one who was fully certified and held the equipment of a major in the field being taught although the formal qualification of teachers is an important indicator for their knowledge and competence in teaching. Ruthland and Bremer, (2002) also refer to teachers' qualification in two ways, traditional and alternative qualification routes. Traditional qualification is when an individual completes an under-graduate degree or post graduate program in education. Alternative routes of qualification are based on coursework in pedagogy and subject area with a degree in education.

The Extent to which Teachers' Attitude Influence Student's Achievement in Physics

Research question two demonstrated that Khana and Gokana students has means score of 2.15 and 2.16 respectively, that are less than the criterion mean value of 2.50. This implies that teacher's attitude does not influenced student's academic achievement in physics. The hypothesis shows no difference in their means responses; meanwhile, the null hypothesis was accepted. Abundant research supports the notion that teacher support has clear implications for students' emotional well-being (hereafter called well-being). Multiple models of teaching attitude converge in the conceptualization of three components. Instructional, socio-emotional and organizational (Connor, 2009; Douglas, 2009). Each of which has been associated with student academic and social success (e.g Hamre and Pianta, 2008; PeryoDonohve, and Weinstain 2007). Although, classroom observation is the gold standard for measuring teaching behavior, although cost effective may not be accurate reflections of teaching behaviour (Douglas 2009). And some research suggests that students' perceptions of their teachers' behaviour maybe more valuable than third-party observe reports for understanding student outcome (Eccles, Midgley, Buchaman, WigfieldReuman and Maclver 1993). However, there are few student report measures of teaching attitude.

The Extent to which Teachers' Experience Influence Student's Academic Achievement in Physics

Research question three shows that there is uniformity in the means score of Khana and Gokana students on how teacher's experience influence academic achievement of physics students. The null hypothesis was accepted on that note, where the z-calculated 0.39 is less than ± 1.9 critical level at 0.05 level of significance. It is earlier said that experienced teacher has a richer background of experience to draw from and can contribute insight and ideas to the course of

teaching and learning. Teachers are open to correction and are less dictatorial in classroom. According to Stringfield and Teddlie (1991), experienced teacher are considered to be more able to concentrate on the most appropriate way to teach particular topics to student who different in their abilities, prior knowledge and background.

Conclusion

Basically, the study examines the extent to which the different teacher's characteristics/variables affect academic achievement. It has been revealed that teacher's qualifications, experience, and gender actually influenced academic achievement of physic students, while attitude and age does not really have any direct implications on students' academic achievement/performance. Hence, the study has spelled out the main issues of concern when it comes to teaching and impacting of knowledge among students of different discipline. The researcher made the following recommendations:

1. Teachers should be given the opportunity to further their studies in order to increase their knowledge in physics.
2. All teachers are role models and as such, expected to put up the best behaviour in the classroom.
3. Teachers should teach with experience.

REFERENCES

- Adolphus, T. & Aziaka, L. S. (2020). Influence of Teacher Qualification and Experience on Secondary School Physics Students' Enrolment and Academic Attainment Rivers State, Nigeria.
- Blömeke, S., Olsen, R. V., & Suhl, U. (2016). Relation of student achievement to the quality of their teachers and instructional quality. In T. Nilsen & J.-E. Gustafsson (Eds.), *Teacher quality, instructional quality and student outcomes. IEA Research for Education 2*, 21–50
- Buddin, R. & Gema, Z. (2009). Teacher qualifications and student achievement in urban elementary schools. *Journal of Urban Economics*. (66), 2, 103-115.
- Cavalluzzo, L. C. (2004). Is National Board Certification an Effective Signal of Teacher Quality? *Alexandria, Virginia: The CNA Corporation*. Retrieved March 9, 2013 from http://www.nbpts.org/userfiles/file/final_study_11204_d_-_cavalluzzo_-_cna_corp..pdf.
- Clotfelter, C.T., Ladd, H.F., & Vigdor, J.L. (2010). Teacher credentials and student achievement in high school: A cross-subject analysis with student fixed effects. *The Journal of Human Resources*, 45(3), 665-681.
- Croninger, G.R. & Valli, I. (2009). Challenges to studying the teaching of reading in elementary classrooms (Sage). *Journal of Educational Researchers*, 38(2), 100-108.
- Crosnoe, R., Johnson, M. K., & Elder, G. H. (2004). Intergenerational bonding in school: The behavioural and contextual correlates of students-teacher relationship. *Sociology of Education*, 77(1), 60-81.
- Curby, T.W., Rudasill, K.M., Ewards, T. & Perez, E. (2011). The role of classroom quality in a metrolating the academic and social risks associated with difficulty temperament. *School Psychology Quarterly*, 26(2), 175-180.
- Darling-Hammond, L. (1998). Teacher and teaching; testing policy hypothesis from a national commission report. *Educational Researcher*. 27(1):5-15.

- Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. *Education Policy Analysis Archives*, 8(1), 1–44.
- Darling-Hammond, L. (2014). Strengthening clinical preparation: The holy grail of teacher education. *Peabody Journal of Education*, 89(4), 547–561.
- Douglas, E.P., & Amelink, C.T. (2009). Quantitative, qualitative and mixed research methods in engineering education. *Journal of Engineering Education*, 98(1), 53-66.
- Eccles, J.S., Midgley, C.J., Wigfield, A., Buchanan, C.M., Reuman, D., Flanagan, C., & Mac Iver, D., (1993). Development during adolescence: the impact of stage-environment fit on young adolescents experiences in schools and families (1993). In J.M. Notterman (ed.), *the evolution of psychology: Fifty years of the American psychologist*.
- Farrer, C.J., & Skinner, E. (2003). Sense of relatedness as a factor in children academic engagement and performance. *International Journal of Educational Psychology*, 7(6), 30-40.
- Fives, H. & Buehl, M. M. (2012). Spring cleaning for the “messy” construct of teachers’ beliefs: What are they? Which have been examined? What can they tell us. *APA Educational Psychology Handbook*, 2, 471–499.
- Gibbons S, Kimmel, H & O’Shea, M. (1997). *Changing Teacher Behaviour through Staff Development: Implementing the Teaching and Content Standards in Science School Science and Mathematics*; 976 (1):302-340.
- Guo, Y., Sun, S., Breitsmith, A., Morrison, F.J., & Connor, M.C. (2015). Behavioural engagement and reading achievement in elementary-school-age children: A longitudinal cross-lagged analysis. *Journal of Education Psychology*, 107(2), 332-344.
- Hamre, B.K., Pianta, R.C., Downer, J.T., & Mashburn, A.J. (2008). Teachers’ perceptions of conflict with young students: looking beyond problem behaviours. *Social Development*, 17(1), 115-136.
- Hanuskek, E.A., Kan, J.F., O’Brian, D.M., & Rivkin, S.G. (2005). The market for teacher quality. *National Bureau of Economic Research Workingpaper* 11154 retrieved march 9, 2013 from <http://www.nber.org/papers/w11154>.
- Hardy, I. & Smith, E. (2006) ‘Contesting tertiary teaching qualification: *An Australian Perspective*’ *Teaching in Higher Education*, 11(2), 337-350.
- Henson, R. (2002). From adolescent Angst to Adulthood: Substantive implications and measurement dilemmas in the development of teacher efficacy research. *Educational Psychologist*, 37 (2), 137–150.
- Humensiky, J., Kuwabar, S., Fogee, J., Well, C., Goodwin, A., & Voorhees, V. (2010). Adolescent with depressive symptoms and their challenges with learning in school. *The International Journal of Emotional Education*, 5(3), 200-210.
- Jepsen, C. (2005). Teacher characteristics and student achievement evidence from teacher survey. *Journal of Urban Economics*.52(2), 5-10.
- Klassen, R., & Tze, V. (2014). Teacher’s self-efficacy, personality and teacher’s effectiveness: A meta-analysis. *Educational Research Review*, 12,59–76.
- Kunter, M., Klusmann, U., Baumert, J., Richter, D., Voss, T., & Hachfeld, A. (2013). Professional competence of teachers: Effects on instructional quality and student development. *Journal of Educational Psychology*, 105(3), 805.
- Minishi, O., Muni, E., Mutai, P., Munyeke, F., & Omolo, H. (2004). Secondary physics students book one, Nairobi: *Kenya Literature Bureau*.

- Otieno, N. O. (2009). Use of discussion methods on secondary school students' achievement in physics. A case study of UasinGishu District. Thesis, Moi University.
- Perry, G.H., Dominy, N.J., Claw, K.G., Lee, A.S., Fiegler, H., Redon, R., Werner, J., Villane, F.A., Mountain, J.L., Misra, R., Cartel, N.P., Lee, C., & Stone, A.C. (2007). Dict and the evolution of human analyses gene copy numbers variation nature genetics, 39(10), 1256-1260.
- Pravica, M. (2005). The importance of physics. *Breakthroughs Drive Economy, Quality of Life Research*, 3(4), 60-66.
- Rice, J. K. (2010). The impact of teacher experience: Examining the evidence and policy implications. Brief no. 11. National Center for Analysis of Longitudinal Data in Education Research. Washington DC: The Urban Institute. (2010). *Research brief for the Center for Longitudinal Data in Education Research*, 11(10), 12-21.
- Scherer, R., & Gustafsson, J. E. (2015). Student assessment of teaching as a source of information about aspects of teaching quality in multiple subject domains: An application of multilevel bifactor structural equation modeling. *Frontiers in Psychology*, 6(15), 50-60.
- Stringfield, S. & Teddlie, C. (1991). School, classroom and students' level indicators of rural school effectiveness. *A Journal of Research in Rural Education*, 7(1), 15-28.
- Tschannen-Moran, M., Woolfolk, H. A., & Hoy, W. K. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research*, 68, 202-248.
- Wayne, A. J. & Youngs, P. (2003). Teacher characteristics and student achievement gains: A review. *Review of Educational Research*, 73, 89-122.
- Weinert, F. E., Schrader, F. W., & Helmke, A. (1989). Quality of instruction and achievement outcomes. *International Journal of Educational Research*, 13(8), 895-914.
- Wheatley, K. (2005). The case for reconceptualizing teacher efficacy research. *Teaching and Teacher Education*, 21, 747-766.
- Wiswall, M. (2013). The dynamics of teacher quality. *Journal of Public Economics*, 100, 61-78.
- Zee, M., & Koomen, H. (2016). Teacher self-efficacy and its effects on classroom processes, student academic adjustment, and teacher well-being: A synthesis of 40 years of research. *Review of Educational Research*, 86, 981-1015.