



TEACHERS ATTITUDE: WHAT IT MEANS FOR SCIENCE STUDENTS' ACADEMIC ACHIEVEMENT IN SECONDARY SCHOOLS

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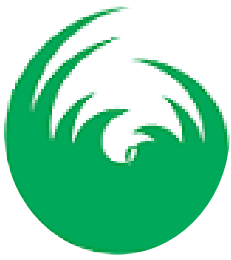
Abstract: The research studied the effect of teachers' attitudes and attitudes toward scientific education on the academic success of secondary school students in the sciences. The research employed a survey research design. The purpose of this study was to examine the influence of the independent variable (Teachers Attitude) on the dependent variables (students' achievement) as they currently exist. The study's population consisted of all students and Basic Science teachers in the (UBE) section of public secondary schools in Rivers State. The study sample comprised of two hundred (200) Science students and one hundred (100) science teachers from the junior secondary sector, i.e., the (UBE) classes chosen using a stratified random selection approach. The Science Teachers Attitude Scale (STAS) was created to measure teachers' attitudes toward scientific and science education. The response options on the modified Likert scale range from strongly agree to strongly disagree. The instrument was adapted from Joseph (2019), and the gathered data were examined and presented using descriptive statistics. The mean and standard deviation were utilised to answer the study questions, whilst the t-test was utilised to test hypotheses. The findings indicated that teachers' attitudes toward science influenced students' academic achievement in the sciences. Some recommendations were made based on the findings.

Keywords: teacher, students, attitude, academic achievement, attitude towards science, basic science.

Introduction

The importance of the teacher in any school setting is underscored by what Okachi (2016) says: the role of the teacher as facilitator of learning and the contribution to students' achievement is paramount in that the success of any science programme depends mainly on the classroom teachers, since they are the ones that implement, translate, and disseminate all our educational goals into action. Poor students' academic achievement in basic science can be turned around by the deliberate observance and application of the teachers' cognitive and affective domains. Since

students overall performance in the classroom is tied to the teacher, it is likely that these teachers' cognitive characteristics may affect the performance of the students in either positive or negative ways. Another important factor that may effectively aid students' achievement is the teacher's attitude and the attitude towards the subject and towards teaching. Attitude has been conceptualized as beliefs and feelings related to a person or event and their resulting behaviour (Joseph, 2019). To Ogbonna, (2015), attitude is the propensity to do something towards or against something in the environment, which reflects a change that may produce positive or negative value. That was the reason Wobodo, (2010) identified teachers' attitudes as a



major factor and an essential ingredient in determining the achievement of the students in science because of their role in shaping the students' readiness for the content. This teacher's disposition determines, to some extent, the degree of understanding of students and acceptance of the materials being presented since they are role models in the classroom. There are clear cases where the attitude of the teacher toward the student deters them from accepting the personality of the teacher; consequently, the teacher's attitude can repel the students from accepting the personality of the teacher. On the other hand, the teacher's attitude can repel the students from showing adequate interest for the subject and when the interest of the students weaned down, the resultant effect is poor academic achievement. This paper therefore, examined the role this teacher's affective characteristics (attitude).plays on the academic achievement of students.

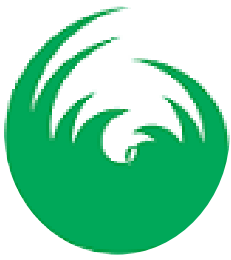
Concept of attitude.

Understanding the concept may broaden the comprehension and proper articulation of the role of attitude to students' academic progress in the classroom and in the sciences therefore, attitude generally, refers to the way of life and feelings related to a person, in this case the teacher or events and their resulting behaviour. This indicates that an individual's sentiments can influence how they respond to something (Kaye & Lindeen, 2010), and according to Gunderson, Ramires, Livine, and Bellock (2012), attitude entails evaluating the link between an object and how they feel about it. Other sources, such as Joseph & Owo(2018), defined attitude as the propensity to behave toward or against something in the environment based on its positive or negative worth (Ogbona, 2015). While Sun, Bradley, and Akers (2012) described attitude as a mental or neutral state, and to Okachi (2016), he defines it as an active impact on the individual's reaction to all things and circumstances linked with them. Within the scope of social psychology, an attitude is described as a

biased or mental preparation for action. According to Souza and Marca (2010), attitude is the obvious and observable stance of human belief. According to the author, a person's attitude impacts what they will see, hear, think, and do. According to them, it refers to a person's prevalent tendency to have either a favourable or unfavourable attitude toward an item. It can be a favourable or bad disposition.

In Olasehinde and Ademola (2014), Kerlinger thought of attitude as a psychological construct or underlying variable, deduced from observable reactions to stimuli, which are supposed to mediate consistency and consistency among those responses. Thus, attitude is associated with how one thinks, feels, perceives, and acts toward cognitive things. Anastasi in Ademola (2014) defines attitude as a propensity to respond positively or negatively to a particular class of stimuli, whereas Devitt, Osbornn, Archer, Dillin, and Willis (2013), who pioneered the study of the concept and its measurement, defined attitude as the degree of positive or negative effect associated with some psychological object.

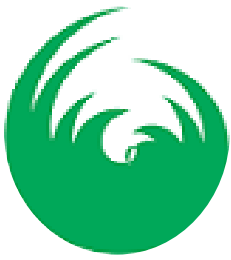
Teachers are integral parts of the school system, which they often do not fully understand. As a result, teachers are likely to engage in behaviors that may contribute negatively to the students' success, resulting in poor achievement. This is particularly dangerous because researches have demonstrated that the teacher is one of the key facilitators to students' success and thus influences their achievement either positively or negatively (Joseph, 2019).Students begin their formal learning of science and technology education at the basic level, and so those in charge of teaching them at this level must be knowledgeable and acquire competence to teach the content. This can be driven by the teacher positive attitudes towards the subject and learning.



While exhibiting its cognitive prowess, teachers are also expected to balance with the affective in order to increase students' interest and their academic achievement in the subject they teach. The affective domain the teacher should display, to complement its cognitive part should include attitude, interest self-efficacy and so on. However, in this study, the author examined teachers' attitude alone and its contribution to students' academic achievement in the sciences beside the cognitive domain. A teacher's attitude generally refers to his or her temperament, character, and feelings, though there are other factors as well that may influence it. Attitude encompasses a teacher's level of passion, resourcefulness, willingness to help, and transmit knowledge of the content. All of these attributes of the teacher play an important part in the teacher's overall classroom performance and the students' eventual success. According to some authors, teachers' attitudes can have an impact on reading comprehension and literacy, which in turn has an impact on students' science achievement. Teachers' attitude or temperaments, according to Papadimitriou and Papadimitriou (2010), can help mold, promote, and encourage students' interests more than teaching strategy applied or the content itself. This is especially true for women, who are frequently discouraged from pursuing science due to societal pressures, biases and beliefs. Teachers that depict their female student badly in the sciences may hinder their academic advancement. Tare, French, Frazie, Diamond & Evans (2011) backed up the former's assertion with a similar finding in primary education, where they discovered that teachers' personal views about science and instruction, whether positive or negative, influenced students' success and achievement in science learning. To put it another way, a teacher's attitude can either play a role in boosting or hampering a student's motivation, which can have an adverse effect on their academic achievement.

Attitude towards science. A teacher's attitude toward science may be characterised as his or her sentiments, views, values, or appraisal of any scientific-related thing, such as school science, the effect of civilisation, or scientists themselves (Devitt, Osborn, Archer, Dillin, & Willis, 2013)). According to Perkins (2013), a teacher's attitude toward science and scientific education has a major impact on the attention of students in the classroom and their eventual success in the subject. Furthermore, Devitt, et al (2013) shown that student attitudes are influenced by instructor qualities. The following data imply that teachers' attitudes have a direct impact on students' attitudes. These attitudes can impact student behaviour, subject interest, and academic achievement, particularly when teachers are complacent and unprepared to deal with the realities of their students' life and are ignorant of how their attitude contributes to students' success.

Teachers may adopt what scholars have dubbed a "deficient perspective" of low-income, gender, racial, or ethnic underachievers, which inhibits student progress. The deficit mode attributes students' underachievement to their poor socioeconomic level for a particular feature. The issue of deficit view ideas is that they lead one race to feel they are superior and others to believe they are inferior. (Tare et al, 2011). The belief that one culture, race, ethnicity, sex, or colour is superior to others undermines and impedes the goals of multicultural education. Instead of modifying the system to fulfil the requirements of all students, proponents of the deficit perspective think that students must adapt to the current structure (Joseph et al 2018). This belief system or paradigm shift is a direct effect of professors who lack cultural neutrality training. As a result, pupils with any of the aforementioned characteristics are required to adopt the norms and values of a culture that is distinct from their own. This



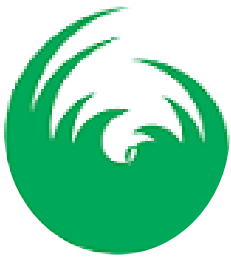
disadvantages them and makes learning harder. Multicultural education will not be adopted in classrooms until attitudes on deficit ideas shift.

As a result of the foregoing, some teachers may cling to negative preconceptions and make assumptions about students' ability, resulting in low accomplishment expectations (Mc Douough, 2009). When students feel their teachers see them adversely, they become cognizant of their teachers' opinions. Frequently, they feel rejected. This may cause children to behave inappropriately in the eyes of their teachers (Zhang, 2011). According to Sun et al. (2012), teacher culture idealises students or learners with morally acceptable behaviour who are easily regulated. Different student conduct from the teacher's perception of the ideal encourages teachers' unfavourable viewpoints when they fail to account for extra-student variables that contribute to the achievement disparity. There is a considerable chance that pupils will find it difficult to connect with their professors if they and their teachers do not share cultural experiences (Mulner, 2006). Students will be most effective in learning situations if teachers become their role model in their lives in appearance, behaviour, and language. These role models console the students and foster a more democratic society via their acts (Yala & Wanjobi, 2011). Afolabi and Andu (2007) recognised teachers' personalities and dispositions as important elements contributing to their successful teaching of respective topics, as well as factors influencing either favourably or adversely to students' progress in the sciences. Okachi (2016) characterised teachers' attitudes as a crucial driver of student success and enrollment in scientific courses. Despite the fact that wobodo (2010) highlighted instructors' attitudes as a crucial element in the teachers' efficient lesson delivery and an essential factor in students' success in the sciences. Literature demonstrates that a teacher's demeanour, sentiments, prejudices, and

behaviours in a negative manner have encouraged pupils to develop a negative attitude towards science. This creates a bad basis for people who have decided to pursue the sciences, resulting in low science achievement. Therefore, Kaye et al. (2010) have established a terrible context for people who have opted to pursue the sciences, resulting in low scientific achievement. (Gunderson et al 2012)

Avis (2014) and Dalton (2004) have independently found that the attitude of the teacher is linked to students' achievement in science subjects. In the same vein, Dalton (2004) agreed that attitudes are related to academic performance when measured on promotion grades. Cheung (2009) said that teachers should demonstrate a positive attitude towards students at all times because attitude plays a great role in students' achievement. Therefore, all teachers should consider the development of a positive attitude towards science subjects as one of their major responsibilities. Siringi (2010) attributed the persistent low achievement of students in sciences subjects to the teachers' negative attitude toward their students and toward the subject. Some teachers merely see the teaching as a way to earn their livelihood and thereby remain uncommitted, this negative attitude affects the attitude of the students as well and the consequence is their poor performance as displayed in many forms. Teachers' attitudes towards their students in schools must be favorable enough to carry students along. According to Kibe et al. (2008), learning science in schools could be exciting and stimulating if there could be motivation on the part of the teacher and as well as the learners, so as to ensure the germination of positive attitudes and subsequently promote positive academic achievement in students.

Literature shows that teachers merely handle science teaching in a way that merely makes the students passive

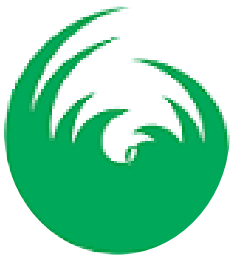


listeners who read and reproduce what they were taught. This shows a negative attitude towards teaching. The results of many studies have backed up the idea that how teachers feel about science or how they teach science affects their academic success, as well as how their students feel about science and how interested they are in it. Also, Ogbonna (2015) confirmed that how teachers felt about assessment practises had a positive effect on how well students did in science and how they felt about science in general. In a similar way, Onocha in Odhiambo et al. (2013) said that teachers' attitudes toward science are a strong predictor of both how well students do in science and how they feel about it. Researchers (Devitt et al., 2013) looked at how teachers felt about teaching science and found that their feelings were one of the main reasons for the differences they saw in students' cognitive achievement. Mutahi (2008) confirms the findings of the previous researchers that teachers' feelings about integrated science (basic science) do affect how well their students do in the subject. So, Balozzi's (2004) study showed that there was a strong link between the teacher's attitude and how well the students did in Integrated Science. In other words, teachers' attitudes toward science, whether they are positive or negative, could be changed if they were more excited about it and got more professional training.

Onoshakpokaiye (2011) said that people can learn how to act by watching someone else do a certain task or activity. Students look up to their teachers as role models whose actions are easy to copy. What the teacher likes or dislikes, what they appreciate, and how they feel about learning, teaching, colour, sex, or race can affect how the student does, whether they are aware of it or not. (Okachi, 2016). If a teacher has a good attitude about the subject he teaches or about his job, he or she will work harder to help their students succeed. So, teachers' feelings about their

subjects, teaching, and students are a big part of how well their students do in the subject or discipline (Okachi, 2016). Studies have shown that a teacher's attitude is an important part of teaching science that affects, determines, and predicts how well a student will do in school (Amjad & Muhammed, 2012). Perkins (2013) indicated that teachers' attitudes contribute significantly to students' attention in the classroom, whereas Adesoji and Olatunbaso (2008) indicated that students' attitudes are related to teacher variables, i.e., teacher attitude directly impacts students' attitude in science. Young in Avis (2014) suggests that attitudes are related to behaviors: they can be acquired or learnt, and so they can as well be taught, and these are durable. Supporting Young's assertion, Kaye et al (2010) stated that the affective status or domain influences almost everything that students do, including future behavior. Therefore, a student's disposition towards science in secondary schools may have a deep influence on their knowledge of and commitment to science in secondary schools. This position of Tare et al, (2011) seems to recommend that if a student is to select science at the senior secondary school or for a science discipline in tertiary education, then it has to be taught so that students' interest and motivation are sustained. The teacher's attitude is therefore significant in the achievement of the student goals.

Despite the derisory results obtained from the findings of the research carried out in this subject matter, there are indications that reviewed showing some positive relationship between teacher attitude and students' academic achievement in science subjects exist. Although, they are not enough to conclude since there were other studies arguing the otherwise. According to Joseph et al, (2018), whether an attitude predicts one's academic achievement depends on a number of factors, particularly ethnic background and social class. Correspondingly,



Dewitte et al (2013) also supported the position of the former, that how teachers' attitudes contribute to the achievement of students is so far unclear. Attitude might not necessarily predict one's academic achievement as it also depends on different factors like race, sample selection, and sample size. Although there are so many studies that have attempted to investigate the influence of teachers' attitudes on the academic achievement of students, the results were not clear enough to conclude that the influence of teachers' attitudes on students' interests and academic achievement could be. Therefore, more investigations are needed to confirm the role or contribution of teachers' attitudes in the academic achievement of students in secondary schools in Rivers State.

Research Questions

1. Is there any difference in the mean achievement scores of students taught by teachers of varying attitudes towards basic science?
2. Is there any effect of the interaction of teachers' backgrounds and attitudes on academic achievement in basic science?

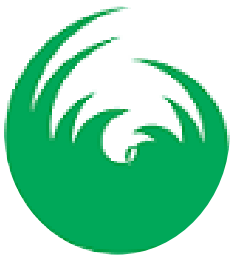
Hypotheses

Ho1 There is no significant difference in the mean achievement scores of students taught by teachers of varying attitudes in basic science

Ho2 There is no significant difference in the mean interaction effect of students taught by teachers of varying attitudes in basic science

METHODOLOGY

The research design known as ex post facto was utilised for this study. This was done to investigate the extent to which the independent factors (teachers' attitudes) have an impact on the dependent variables (students' achievements) as they now stand. The participants in the research were all of the students and teachers who were enrolled in the Science classes at Rivers State's public secondary schools that were in the UBE section. The schools in Rivers State were stratified into groups according to the state's three senatorial districts (Rivers East, West, and Central). There are a total of 100,533 secondary school pupils and 278 secondary schools in Rivers State. A stratified random sampling method was used to choose the participants for the study, and the sample included one hundred (100) instructors of basic science and six hundred (600) students who were enrolled in the junior secondary section (UBE) of the school. First, the educational institutions in the state were classified into one of three senatorial districts: One hundred (100) science instructors from the thirty schools in the state who were chosen proportionally for the study were chosen for the research project based on the degrees, certifications, and subject specialisations that they held. The thirty schools each chose three educators to represent their institution. The Science Teachers' Attitude Scale is a tool that was developed to collect data on how educators feel about science as a discipline and how they feel about teaching science. It is divided into two parts, A and B: In Section A, there are questions that assess information about teachers, including their academic qualification, their area of expertise, their gender, and the subject they teach. There are 23 questions in Section B that pertain to the attitudes of instructors toward science and the teaching of science. The items employ a modified version of the Likert scale; with responses ranging from strongly agree to strongly disagree. The instrument was adopted from Joseph (2019). In analysing the collected data, descriptive statistics were



employed. The mean and standard deviation were utilised to answer the research questions, and the t-test was employed to demonstrate the validity of the hypotheses.

Result

Research Question 1. Is there any difference in the mean achievement scores of students taught by teachers of varying attitudes towards basic science?

Table 1: The difference in the mean achievement scores of students taught by teachers of varying attitudes towards Science

Attitude		Academic Achievement
Positive Teachers' Attitude	Mean	55.0833
	N	48
	Std. Deviation	16.15857
Negative Teachers' Attitude	Mean	60.9808
	N	52
	Std. Deviation	16.36051

Table 1 displays the difference in the mean accomplishment scores of pupils taught by teachers with differing attitudes about science. The mean academic achievement score for teachers with a good attitude was 55.08, with a standard deviation of 16.16. The mean accomplishment scores of pupils whose teachers showed

unfavourable attitudes were 60.98, while the standard deviation was 16.36.

Ho1 There is no significant difference in the mean achievement scores of students taught by teachers of varying attitudes in science.

Table 2: Summary of independent sample t-test on the difference in the mean achievement scores of students taught by teachers of varying attitudes towards Science

Variable	Attitude		N	Mean	SD	T	Df	p-value
Academic Achievement	Positive attitude	teachers'	48	55.08	16.16	-1.812	98	.073
	Negative attitude	teachers'	52	60.98	16.36			



The summary of the independent sample t-test on the difference between the mean achievement scores of students taught by teachers with differing attitudes toward fundamental science is presented in Table 2. It demonstrates that there is no statistically significant difference in the mean achievement ($t = 1.812, df = 98, p = .078$) scores of students taught by teachers with different views toward fundamental science. The null hypothesis

one, that there is no significant difference in the mean achievement scores of students taught by teachers with different attitudes towards science, was maintained at .05 levels of significance.

Research Question 2. Is there any effect of the interaction of teachers’ backgrounds and attitudes on academic achievement in basic science?

Table 3. The effect of interaction of teachers’ background and attitude on the mean achievement scores of students in Science

Qualification	Experience	Attitude	Mean	SD	N
CERTIFICATE	0-5 Years	Negative Teachers' Attitude	43.00		1
	6-10 Years	Negative Teachers' Attitude	72.20	8.04	5
	11- 15 Years	Positive Teachers Attitude	48.75	18.55	4
		Negative Teachers' Attitude	61.00	5.66	2
BACHELOR	0-5 Years	Positive Teachers' Attitude	56.18	17.04	17
		Negative Teachers' Attitude	57.58	18.98	19
	6-10 Years	Positive Teachers’ Attitude	71.33	20.4	3
		Negative Teachers’ Attitude	67.33	23.46	3
	11- 15 Years	Positive Teachers’ Attitude	53.40	13.18	5
		Negative Teachers’ Attitude	70.75	13.72	8
	16-20 Years	Positive Teachers’ Attitude	53.40	15.45	5
	21 & Years and Above	Positive Teachers’ Attitude	44.67	19.35	3
		Negative Teachers’ Attitude	50.80	15.07	5
	MASTER DEGREE	0-5 Years	Positive Teacher’s Attitude	52.00	
Negative Teachers' Attitude			58.00	15.39	3
6-10 Years		Positive Teachers' Attitude	59.75	18.14	4
		Negative Teachers' Attitude	64.00		1
11- 15 Years		Positive Teachers' Attitude	55.00		1
		Negative Teachers' Attitude	58.50	11.9	4
16-20 Years		Positive Teachers' Attitude	68.00		1
		Negative Teachers' Attitude	57.00		1
21&Above Years		Positive Teachers' Attitude	33.00		1
PHD		21 & Above Years	Positive Teachers' Attitude	55.00	12.12

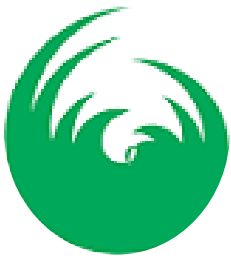


Table 3 demonstrates the interaction effect of teachers' background (teachers' qualification and teaching experience) and attitude on students' mean basic science achievement scores. It indicates that students whose teachers had a certificate as their qualification, with 6-10 years of teaching experience, and negative attitudes had the greatest mean achievement score (M=72.20). Teachers with 6- 10 years of experience and a pleasant attitude came

in second (M = 71.33) The lowest mean achievement score (M=33.00) was earned by students whose teachers held a Ph.D., had at least 21 years of experience, and had a positive attitude.

Ho2. There is significant difference on the effect of interaction of teachers' background and attitude on the mean achievement scores of students in Science

Table 4: The Summary of ANOVA on the interaction effect of teachers' background and attitude on the mean achievement scores of students in Science,

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	1562.091 ^a	24	65.087	1.016	.458
Intercept	97742.351	1	97742.351	222.845	.001
Qualification	755.725	3	251.908.	1.008	.393
Experience	3166.878	4	791.791	3.169	.017
Attitude	867.068	1	867.068	3.169	.066
Qualification * Experience	152.537	2	25.423	.397	.879
Background * Attitude	5164.195	2	313.567	5.161	.008
Error	9017	91	99.093		

a. R Squared = .245 (Adjusted R Squared = .004)

The interaction effect of teachers' background (teachers' qualification and teaching experience) and attitude on the mean achievement scores of students in science is depicted in Table 4. The study demonstrated a significant effect of interaction between teachers' background and attitude on students' basic science achievement scores (F2, 91=5.161, $p > .05$, $\alpha = .05$). We may reject the null hypothesis, which asserts that there is no significant interaction impact of teachers' background and attitude on students' mean achievement scores in science at the .05 level of significance.

Discussion.

Again, the teachers' perspectives on science were split into two groups: those who had good views and those who had unfavourable opinions (Table 1). On the academic achievement tests, the students who were taught by teachers with negative attitudes had higher mean scores than students who were taught by teachers with positive attitudes. The study also revealed that, for the sake of convenience, the teachers were split into two groups: those who had positive attitudes and those who had negative views. However, teachers' attitudes were rated higher than



50 percent in both areas, and the corresponding students' scores in achievement (72/79: SD = 11.65, 55.08, SD = 16.16 and 75.78: SD = 7.73, 60.98: SD = 16.36) for low and high, respectively, demonstrated that students' achievement in science were not influenced by the teacher's attitude toward the subject. In contrast to the findings of Dalton (2009) and Williams (2004), who found that the attitudes of teachers had a significant bearing on the academic achievement of their students, we found no such correlation. The findings also revealed (Table 1) that the attitudes of teachers, whether positive or negative, do not significantly influence the academic achievement of students. The outcomes of the current study provided support for the theories proposed by Smith (2004) and Takei (2003). These researchers attributed the attitudes of teachers to those factors that stymied the development of their students, which they termed a "deficient view." "It is risky and has the potential to instill ethnic, gender, and ethnic inclinations that might encourage negative stereotypes that can prevent students from reaching their full potential, resulting in low success and apathy in the subject," the author writes. "This can prevent students from reaching their full potential, which can lead to low success and apathy in the topic." In a similar vein, Siringi (2010) and Perkins (2013) corroborated the findings of the former study, which stated that teachers' negative attitudes toward their students and the subject matter were the root cause of students' poor performance and lack of interest in sciences like chemistry. There is no discernible link between the qualifications of teachers and the attitudes they have toward their students in terms of students' achievement. However, a significant amount of interest and success may be attributed to the connection that exists between a teacher's years of expertise and their attitude. Even though the teachers were divided into two groups for convenience, those with good attitudes and those with negative views, the research revealed that both groups held positive

attitudes. The poll revealed, however, that both groups felt positive about themselves. In contrast, the teacher's attitudes toward science were over 50 percent in both categories. Corresponding student scores in interest and accomplishment (72/79: SD = 11.65; 55.08; SD = 16.16; and 75/78: SD = 7.73; 60.98; SD = 16.36) for low and high scores demonstrated that the teacher's attitude toward science did not influence the students' interest and achievement. Both Dalton (2009) and Williams (2004) discovered that how instructors felt about their employment had a substantial impact on the academic success of their students. Table 17 demonstrates that the data also indicate that instructors' views, whether good or negative, have little effect on students' interest in science or performance in science class. This was demonstrated by the fact that neither positive nor negative attitudes increased pupils' interest in science. According to Smith (2004) and Takei (2003), who stated that a "deficit view" was dangerous and could lead to ethnic, gender, and ethnic tendencies that could promote negative stereotypes and prevent students from reaching their full potential, it was discovered that teachers' attitudes prevented students from achieving their full potential. They performed poorly in school and lost interest in the topic as a result. The outcomes of the new analysis supported these prior conclusions. As an illustration, Siringi (2010) and Perkins (2013) concurred with the findings of the first research, stating that teachers' unfavourable attitudes toward their students and the subject matter were the reasons why students performed badly and lacked interest in essential disciplines such as chemistry. The authors reported that this occurred

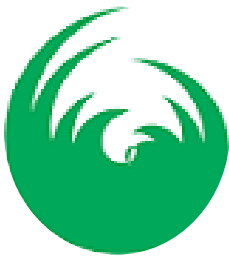
The effect of teachers' backgrounds and attitudes on students' academic success indicated that teachers whose greatest level of education was a certificate and who had a negative attitude had students with higher mean scores



than students whose teachers had a positive attitude. Students who had teachers who displayed a good attitude had a higher mean achievement score than students whose teachers displayed a negative attitude. This was true for students taught by those with a bachelor's degree. The outcome was the same for those teachers who had a master's degree as their qualification as it was for those teachers who had a bachelor's degree as their qualification.

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