
INFLUENCE OF TEACHERS' CHARACTERISTICS ON INTRINSIC MOTIVATION OF BIOLOGY TEACHERS IN SECONDARY SCHOOLS IN EKET EDUCATION ZONE, AKWA IBOM STATE, NIGERIA.

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ABSTRACT

This study examined the influence of teachers' characteristics on the intrinsic motivation of Biology teachers in secondary schools in Eket Education Zone, Akwa Ibom State, Nigeria. The study was motivated by the recognition that teachers' professional attributes play a critical role in enhancing motivation, instructional effectiveness, and overall educational outcomes. An ex-post facto research design was adopted for the study. The population comprised all thirty-three (33) Biology teachers in thirteen (13) public secondary schools in the Eket Education Zone. A sample of twenty-seven (27) Biology teachers, representing 83% of the population, was selected using purposive sampling techniques. Senior Secondary Two (SS2) Biology students served as raters in assessing teachers' characteristics, particularly attitude, self-efficacy, and subject-matter knowledge. Data were collected using two researcher-developed instruments: the Biology Teachers' Characteristics Questionnaire (BTCQ) and the Biology Teachers' Intrinsic Motivation Questionnaire (BTIMQ). The instruments were validated by experts and tested for reliability using Cronbach's alpha, which produced a reliability coefficient of 0.90, indicating high internal consistency. Data collected were analysed using the Pearson Product Moment Correlation Coefficient (PPMC) at the 0.05 level of significance. The findings revealed strong and statistically significant

relationships between teachers' characteristics, especially professional attitude, self-efficacy, and subject-matter knowledge, and their intrinsic motivation. The study concluded that positive teacher characteristics significantly enhance intrinsic motivation among Biology teachers. It was therefore recommended that educational authorities prioritize professional development programmes that strengthen teachers' attitudes, competence, and self-belief in order to improve motivation and teaching effectiveness in secondary schools.

KEYWORDS: Teacher characteristics, intrinsic motivation, Biology teachers, teacher attitude, teacher self-efficacy, subject-matter knowledge, secondary education.

INTRODUCTION

Teachers play an indispensable role in teaching-learning activities and remain central to the effectiveness of any educational system. Teachers constitute the backbone of education, as the success or failure of instructional processes largely depends on their professional competence, commitment, and motivation. Contemporary studies affirm that teachers' quality, attitudes, and instructional behaviours significantly influence students' academic motivation and achievement (Shittu, 2024; Springer et al., 2025). In line with this position, effective teachers are those who possess adequate subject-matter knowledge, sound pedagogical skills, positive professional attitudes, and the ability to establish supportive relationships with learners.

In Nigeria and similar developing contexts, teacher quality, particularly academic qualification and professional competence, has continued to attract research attention. Recent empirical evidence indicates that teachers' academic and professional qualifications significantly predict students' academic performance in secondary schools (Shittu, 2024). Teachers' characteristics such as qualification, experience, self-efficacy, and classroom disposition have been shown to shape instructional quality, which ultimately translates into students' learning outcomes and academic achievement (Lauermann & ten Hagen, 2025).

Effective teaching in today's knowledge-driven and technology-oriented society requires Biology teachers who possess adequate knowledge of instructional goals, the philosophy of science, subject-matter content, inquiry-based and learner-centred instructional strategies, and appropriate assessment techniques. In addition, teachers are expected to demonstrate competence in the use of Information and Communication Technology (ICT), improvisation of instructional materials, and the development of relevant life skills such as scientific reasoning and problem-solving abilities (Ibe et al., 2016). Teachers who create supportive

and engaging classroom environments enable students to actively participate in learning, relate scientific concepts to societal needs, and develop competencies required for a rapidly changing world.

Teachers' attitudes constitute a critical psychological factor influencing instructional practices and students' learning experiences. Attitude refers to a predisposition that shapes how teachers think, feel, and behave toward their profession and students. Research consistently shows that teachers with positive attitudes toward teaching demonstrate greater enthusiasm, commitment, and instructional effectiveness, which positively influences students' interest and academic performance (Mosha, 2014; Guthrie & Knowles, 2019). Conversely, negative attitudes may hinder lesson preparation, classroom interaction, and overall teaching effectiveness.

Students' learning is also influenced by teachers' interpersonal attitudes, including their relationships with students, classroom management skills, use of positive reinforcement, and avoidance of abusive or discouraging language. Teachers who make lessons engaging and demonstrate self-motivation foster higher levels of student motivation and participation (Goe, 2017). Brophy (2014) further emphasized that teachers' positive yet realistic expectations of students, coupled with clear instructional goals, enhance students' willingness to participate and persist in learning tasks.

Subject-matter knowledge remains a cornerstone of effective teaching. Both philosophical reasoning and empirical research support the view that teachers' depth of content knowledge significantly affects their ability to facilitate meaningful learning. Teachers who lack adequate or accurate subject knowledge may inadvertently transmit misconceptions to students, thereby undermining learning outcomes. Consequently, teachers' interest in and mastery of the subjects they teach are essential for effective instruction (Biber & Carger, 2010).

Gender-related factors may also influence teachers' instructional behaviours and professional interactions. Gender roles, biases, and societal expectations continue to shape achievement-related behaviours in educational settings. Studies suggest that while gender differences exist in teaching styles and classroom interactions, students tend to respond more positively to teachers who demonstrate competence, care, and supportive attitudes, regardless of gender (Lauermann & ten Hagen, 2025). Such supportive behaviours are closely linked to intrinsic motivation among both teachers and students.

Teacher motivation is a multidimensional construct encompassing both extrinsic and intrinsic components. Extrinsic motivation refers to engagement in teaching activities driven by external rewards such as salary, allowances, promotion, and favourable working conditions (Covington, 2000). Although extrinsic incentives may sustain behaviour in the short term, research suggests that reliance on external rewards alone may reduce persistence and commitment, especially when rewards are absent (Dev, 2007; Lepper, 2018). Levesque et al. (2011) noted that externally regulated behaviours are often discontinued when tasks become challenging or rewards are withdrawn.

In contrast, intrinsic motivation is driven by internal factors such as professional autonomy, recognition, respect, participation in decision-making, and a sense of purpose. Intrinsically motivated teachers demonstrate higher levels of commitment, satisfaction, and instructional effectiveness, regardless of prevailing working conditions. Such teachers are more likely to adopt autonomy-supportive teaching practices that foster students' intrinsic motivation and sustained engagement in learning (Deci & Ryan, 2013).

Statement of the Problem

Over the years, the professional performance of Biology teachers has shown a noticeable decline, with adverse implications for students' academic achievement in Biology at the secondary school level. This declining performance has been linked to several interrelated factors, including inadequate motivation, low self-efficacy, diminished professional dignity and pride, lack of respect and recognition, poor collegial relationships, limited autonomy in classroom management, and insufficient opportunities for the utilization and development of teachers' talents. These unfavourable conditions often manifest in poor job performance, low commitment to professional responsibilities, and a gradual attraction of less qualified individuals into the teaching profession. In response to these challenges, some qualified Biology teachers have increasingly sought alternative employment opportunities in sectors such as oil and gas, banking, and manufacturing industries, where professional esteem, recognition, and career advancement are perceived to be more assured. Within the school environment, teachers' lack of appreciation, declining societal respect, undue criticism from parents and students, and minimal professional recognition have contributed significantly to frustration, burnout, and a steady erosion of professional standards in Nigeria's secondary school system.

The consequences of poor intrinsic motivation among teachers are far-reaching. Within secondary school administration, such challenges may result in increased examination

malpractices, poor quality instruction, low student learning outcomes, heightened teacher indiscipline, reduced morale, and negative student attitudes toward learning. These persistent issues underscore the critical role of teachers' intrinsic motivation in sustaining effective teaching and learning processes. Against this backdrop, the present study sought to examine the influence of teachers' characteristics on intrinsic motivation among Biology teachers in secondary schools in Eket Education Zone, Akwa Ibom State, Nigeria.

Purpose of the Study

Generally, the study examined the extent of relationship between teachers' characteristics and intrinsic motivation of Biology teachers in secondary schools in Eket Education Zone, Akwa Ibom State. Specifically, the study sought to:

1. Determine the extent of relationship between qualification and intrinsic motivation of Biology teachers in secondary schools in Eket Education Zone, Akwa Ibom State.
2. Determine the extent of relationship between years of experience and intrinsic motivation of Biology teachers in secondary schools in Eket Education Zone, Akwa Ibom State.

Research Questions

The following research questions were stated to guide the study:

1. What is the extent of the relationship between academic qualification and intrinsic motivation of Biology teachers in secondary schools in Eket Education Zone, Akwa Ibom State?
2. What is the extent of the relationship between years of experience and intrinsic motivation of Biology teachers in secondary schools in Eket Education Zone, Akwa Ibom State?

Research Hypotheses

The following null hypotheses are formulated to guide this study:

Ho₁: There is no significant relationship between academic qualification and intrinsic motivation of Biology teachers in secondary schools in Eket Education Zone, Akwa Ibom State.

Ho₂: There is no significant relationship between years of experience and intrinsic motivation as Biology teachers in secondary schools in Eket Education Zone, Akwa Ibom State.

Theoretical Framework

Two-Factor Theory of Motivation, Frederick Herzberg (1959)

The Two-Factor Theory, also known as the Motivator–Hygiene Theory, was propounded by Frederick Herzberg and his research associates in 1959. The theory postulates that job satisfaction and job dissatisfaction arise from two distinct sets of factors. According to Herzberg, certain job-related factors, referred to as motivators or intrinsic factors, lead to job satisfaction, while another set of factors, known as hygiene or extrinsic factors, do not necessarily motivate employees but serve to prevent job dissatisfaction when adequately addressed. Hygiene factors are associated with the context or environment in which the job is performed. These include supervision, interpersonal relationships, physical working conditions, salary, organizational policies and administration, fringe benefits, and job security. The absence or inadequacy of these factors can result in dissatisfaction; however, their presence alone does not guarantee motivation or high performance. In contrast, motivator factors are inherent in the nature of the job itself and are directly related to personal growth and self-actualization. These include achievement, recognition, the work itself, responsibility, and opportunities for advancement. Herzberg emphasized that the opposite of job satisfaction is not dissatisfaction but rather no satisfaction, and similarly, the opposite of dissatisfaction is no dissatisfaction. Herzberg and his associates further examined the effects of these factors on job performance, employee turnover, organizational attitudes, and mental health. Their findings revealed that employees' attitudes significantly influence how tasks are performed, with positive attitudes exerting a stronger impact on performance than negative attitudes. Negative attitudes were associated with varying degrees of physical or psychological withdrawal from work, thereby increasing turnover tendencies. Additionally, the degree of loyalty an employee exhibits toward an organization was found to correspond with their level of job satisfaction.

At the time Herzberg introduced this theory, job satisfaction was commonly viewed as existing along a single continuum, with dissatisfaction and satisfaction at opposite ends. Consequently, many organizations focused predominantly on improving hygiene factors in an attempt to enhance productivity. Herzberg argued that this approach was fundamentally flawed, as improvements in hygiene factors alone merely prevent dissatisfaction but do not promote genuine motivation or enhanced performance. He maintained that sustainable productivity gains can only be achieved by strengthening motivator factors. Herzberg further suggested that jobs should be redesigned to enhance employees' opportunities for meaningful

achievement and personal growth. Job satisfaction may also be enhanced by aligning an individual's abilities and competencies with job requirements during the recruitment and selection process. The role of supervisors is equally critical, as they are expected to provide timely recognition, support autonomy, and effectively plan and organize work activities. Although it may not always be feasible for employees to set their own goals, allowing them discretion in determining how tasks are accomplished can foster a sense of ownership, achievement, and responsibility.

The relevance of Herzberg's Two-Factor Theory to the present study lies in its emphasis on intrinsic motivation as a driver of improved job performance. In the context of secondary school education, teachers are more likely to enhance their instructional effectiveness and professional commitment when they experience intrinsic satisfaction derived from recognition, responsibility, and meaningful work. Conversely, when teachers' basic hygiene needs, such as job security, fair treatment, supportive interpersonal relationships, and adequate working conditions, are unmet, dissatisfaction may arise, leading to reduced motivation and poor performance. Therefore, school principals and administrators must strive to make teaching intrinsically rewarding by assigning appropriate responsibilities, recognizing teachers' efforts, and creating supportive work environments that promote teachers' sense of pride, self-esteem, and self-actualization.

METHODOLOGY

An ex-post facto research design was adopted for the study. The population comprised all thirty-three (33) Biology teachers in thirteen (13) public secondary schools in Eket Education Zone, Akwa Ibom State. A sample of twenty-seven (27) Biology teachers, representing 83% of the population, was drawn from the thirteen public secondary schools in the zone. Senior Secondary Two (SS2) Biology students served as raters in evaluating the teachers based on their attitude, self-efficacy, and subject-matter knowledge. A purposive sampling technique was employed in selecting the participants. Data were collected using researcher-developed instruments titled Biology Teachers' Characteristics Questionnaire (BTCQ) and Biology Teachers' Intrinsic Motivation Questionnaire (BTIMQ). The instruments were subjected to face validation by three experts; two from the Department of Curriculum Studies and one from the Department of Educational Foundations, University of Uyo. A pilot testing procedure was conducted to determine the internal consistency of the instruments. Reliability was established using Cronbach's alpha, which yielded an overall reliability coefficient of 0.90, indicating high internal consistency.

The questionnaires were administered to the respondents by the researcher with the assistance of two trained research assistants. Data collected were analysed using the Pearson Product Moment Correlation Coefficient (PPMC) to answer the research questions and test the hypotheses at the 0.05 level of significance. The null hypotheses were tested using the probability value (p). The null hypothesis (H_0) was rejected when $p \leq 0.05$ and retained when $p > 0.05$. Ethical considerations were strictly observed. The purpose of the study was clearly explained to all respondents. Participation was voluntary, and respondents were assured that all information provided would be treated with strict confidentiality. Their privacy was duly respected throughout the study.

RESULTS

Research Question 1

What is the extent of the relationship between academic qualification and intrinsic motivation of Biology teachers in secondary schools in Eket Education Zone, Akwa Ibom State?

Table 1: The Summary of result of the relationship between Academic Qualification and Intrinsic Motivation of Biology Teachers in secondary schools in Eket Education Zone, Akwa Ibom State.

Variable	X	R- value	Remark
Academic qualification (X)	3.59		
		.736	Very strong relationship
Intrinsic motivation (Y)	2.85		

The result in Table 1 shows the relationship between academic qualification and intrinsic motivation of Biology teachers in secondary schools in Eket Education Zone, Akwa Ibom State, Nigeria with the correlation coefficient of .736 and a mean value of 3.59 for academic qualification and 3.85 for intrinsic motivation. This implies that there a very strong relationship between academic qualification and intrinsic motivation of Biology teachers in secondary in Eket Education Zone, Akwa Ibom State, Nigeria.

Research Question 2

What is the extent of the relationship between years of experience and intrinsic motivation of Biology teachers in secondary schools in Eket Education Zone, Akwa Ibom State?

Table 2: The Summary of result of the relationship between years of experience and Intrinsic Motivation of Biology Teachers in secondary schools in Eket Education Zone, Akwa Ibom State

Variable	X	R- value	Remark
Years of Experience (X)	2.63		
		.840	Very strong relationship
Intrinsic motivation (Y)	2.59		

The result in Table 2 shows the relationship between teacher years of experience and intrinsic motivation of Biology teachers in secondary schools in Eket Education Zone, Akwa Ibom State, Nigeria with the correlation coefficient of .840 and a mean value of 2.63 for teacher years of experience and 2.59 for intrinsic motivation. This implies that there a very strong relationship between teacher attitude and intrinsic motivation of Biology teachers in secondary in Eket Education Zone, Akwa Ibom State, Nigeria.

Test of Null Hypotheses

Hypothesis 1

There is no significant relationship between academic qualification and intrinsic motivation of Biology teachers in secondary schools in Eket Education Zone, Akwa Ibom State.

Table 3: The Result of Pearson Product Correlation Coefficient (PPMC) on relationship Between academic qualification and intrinsic motivation of Biology teachers in secondary schools in Eket Education Zone.

Variable	Academic Qualification	Intrinsic Motivation
Academic Qualification	Pearson Correlation	1
	Sig. (2-tailed)	.000
	N	27
Intrinsic Motivation	Pearson Correlation	.736*
	Sig. (2-tailed)	.000
	N	27

*. Correlation is significant at the 0.05 level (2-tailed).

The result in Table 3 shows the relationship between academic qualification and intrinsic motivation of Biology teachers in secondary schools in Eket Education Zone, Akwa Ibom State, Nigeria. The table also reveals the R- value as .736 and the p-value as .000. However, since the p-value is less than 0.05 ($p < 0.05$), The null hypothesis which states that there is no significant relationship between academic qualification and intrinsic motivation of Biology teachers in secondary schools in Eket Education Zone, Akwa Ibom State, Nigeria is rejected

while the alternative is retained. Therefore, it can be concluded that there is a significant relationship between academic qualification and intrinsic motivation of Biology teachers in secondary schools in Eket Education Zone, Akwa Ibom State, Nigeria.

Hypothesis 2

There is no significant relationship between years of experience and intrinsic motivation of Biology teachers in secondary schools in Eket Education Zone, Akwa Ibom State.

Table 4: The Result of Pearson Product Correlation Coefficient (PPMC) on relationship between years of experience and intrinsic motivation of Biology teachers in secondary Schools in Eket Education Zone

Variable	Year of Experience	Intrinsic Motivation
Year of Experience	Pearson Correlation	1
	Sig. (2-tailed)	.000
	N	27
Intrinsic Motivation	Pearson Correlation	.840*
	Sig. (2-tailed)	.000
	N	27

*. Correlation is significant at the 0.05 level (2-tailed).

The result in Table 4 shows the relationship between teachers' years of experience and intrinsic motivation of Biology teachers in secondary schools in Eket Education Zone, Akwa Ibom State, Nigeria. The table also reveals the R- value as .840 and the p-value as .000. However, since the p-value is less than 0.05 ($p < 0.05$), The null hypothesis which states that there is no significant relationship between teachers' years of experience and intrinsic motivation of Biology teachers in secondary schools in Eket Education Zone, Akwa Ibom State, Nigeria is rejected while the alternative is retained. Therefore, it can be concluded that there is a significant relationship between teachers' years of experience and intrinsic motivation of Biology teachers in secondary schools in Eket Education Zone, Akwa Ibom State, Nigeria.

DISCUSSION OF FINDINGS

The discussion was carried out in line with the findings of both research questions and hypotheses.

Academic Qualification and Intrinsic Motivation

The finding of Research Question One revealed a very strong positive relationship between academic qualification and intrinsic motivation among Biology teachers in secondary schools in Eket Education Zone, Akwa Ibom State, Nigeria. The corresponding hypothesis further confirmed that this relationship was statistically significant. This implies that teachers' academic qualifications play a crucial role in enhancing their intrinsic motivation. Academic qualification, to a large extent, influences the quality of lesson delivery, as higher qualifications often equip teachers with advanced pedagogical knowledge, improved instructional strategies, and greater competence in the utilization of instructional materials. Exposure to rigorous academic training may also strengthen teachers' professional self-concept, emotional intelligence, and sense of efficacy, thereby fostering internal satisfaction and commitment to teaching. In this regard, academic qualification serves not only as a professional asset but also as a motivational resource within the academic environment.

This finding corroborates Maundu (2016), who reported a significant correlation between teacher qualification and pupils' academic performance in Kenya. The improved performance was attributed to effective instructional practices demonstrated by qualified teachers. Similarly, Maundu (2016) found that teachers who graduated from the Kenya Science Teachers College exhibited stronger practical orientation compared to those who obtained degrees from public universities, suggesting that specialized professional preparation enhances teaching effectiveness. The present finding is also consistent with Wilson et al. (2017), who asserted that, despite certain limitations in teacher education and licensing systems, fully prepared and certified teachers tend to achieve better student outcomes than those without formal preparation. Furthermore, Ashton and Williams (2018) observed that teachers with standard state certification received higher supervisory ratings and demonstrated greater student achievement compared to teachers who did not meet professional standards. Collectively, these studies reinforce the conclusion that academic qualification is a significant predictor of teachers' intrinsic motivation and overall effectiveness in the classroom.

Attitude and Intrinsic Motivation

The finding of Research Question Two revealed a very strong positive relationship between teachers' attitude and intrinsic motivation among Biology teachers in secondary schools in Eket Education Zone, Akwa Ibom State, Nigeria. The corresponding hypothesis further confirmed that this relationship was statistically significant. This indicates that teachers'

attitudes toward their profession significantly influence their level of intrinsic motivation. A positive attitude toward teaching enhances enthusiasm, commitment, and willingness to engage students effectively, whereas a negative attitude may reduce motivation and instructional effectiveness. Teachers who possess favourable attitudes are more likely to demonstrate passion for teaching, persistence in instructional tasks, and dedication to student learning, which in turn positively affects students' academic performance. Attitude reflects the manner of thinking, feeling, and behaving that reveals an individual's disposition toward a given task or profession.

This finding aligns with Guthrie and Knowles (2019), who reported that attitudes are directly linked to motivation and provide valuable insight into understanding motivational and attitudinal processes. It is also consistent with Philipp (2018), who conceptualized attitudes as tendencies to evaluate an entity with varying degrees of favour or disfavour, typically expressed through cognitive, affective, and behavioural responses. In this sense, attitudes function as enduring dispositions that guide behaviour and influence individuals toward actions that may be perceived as either positive or negative. Overall, the result underscores the importance of fostering positive professional attitudes among Biology teachers as a means of strengthening intrinsic motivation and enhancing instructional effectiveness in secondary schools.

Summary of the Study

The study investigated the influence of teachers' characteristics, particularly attitude and other related personal variables, on the intrinsic motivation of Biology teachers in secondary schools in Eket Education Zone, Akwa Ibom State, Nigeria. Using a correlational research design, data were collected from Biology teachers to determine the nature and strength of the relationship between identified teacher characteristics and intrinsic motivation. The findings revealed a very strong and statistically significant relationship between teachers' attitude and their intrinsic motivation. This implies that teachers who exhibit positive attitudes toward their profession, students, and instructional responsibilities tend to demonstrate higher levels of intrinsic motivation. The study emphasized that intrinsic motivation enhances teachers' commitment, instructional effectiveness, classroom engagement, and overall productivity. The research contributes to understanding how psychological and professional dispositions of teachers directly influence their internal drive to teach effectively.

CONCLUSION

The study concluded that teachers' characteristics, especially attitude, significantly influence their intrinsic motivation. A positive attitude toward teaching fosters enthusiasm, dedication, and personal satisfaction in the profession. Conversely, negative attitudes may weaken teachers' internal drive and reduce instructional effectiveness. Therefore, intrinsic motivation among Biology teachers is not only a function of external incentives but is strongly connected to internal dispositions such as attitude. Strengthening positive teacher characteristics can consequently improve teaching quality and student academic outcomes.

Contribution to Knowledge

This study contributes to knowledge in the following ways:

1. **Empirical Evidence in Local Context:** It provides empirical data on the relationship between teachers' attitude and intrinsic motivation within the Eket Education Zone, contributing to Nigerian educational research.
2. **Bridging Psychological and Educational Constructs:** The study integrates psychological constructs (attitude and intrinsic motivation) within classroom instructional practice.
3. **Policy-Relevant Insight:** It highlights teacher disposition as a critical variable in educational effectiveness, offering evidence-based insights for policy formulation.
4. **Extension of Motivation Theories:** The findings support motivational theories that emphasize the role of internal dispositions in shaping professional behaviour and job performance.

Recommendations

Based on the findings, the following recommendations are made:

1. **Regular Capacity-Building Workshops:** Institutions should organize seminars and workshops focused on positive professional attitude development and motivational enhancement for teachers.
2. **Mentorship Programmes:** Schools should establish mentorship systems where experienced and motivated teachers guide younger teachers.
3. **Supportive Work Environment:** Government and school management should provide conducive working conditions that reinforce positive teacher attitudes.
4. **Recognition and Appreciation:** Management of institutions should introduce structured recognition systems to reinforce positive behaviour and professional commitment.

5. Continuous Psychological Support: Institutions should provide access to counselling services and motivational support programmes to sustain teachers' intrinsic drive.

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