

Secondary School Biology Teachers' Social Awareness as Determinant of Students' Performance in Minna, Niger State

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ABSTRACT

The study investigated the relationship between Biology teachers' Social awareness and secondary school Biology students' performance in Minna, Niger State. The study adopted a correlational research design and was guided by one research question. A total of 105 Biology teachers and 520 Biology students formed the sample that was used for the study. The study focused on Social awareness which is one of the constructs of emotional intelligence. The instrument used for data collection from the Biology teachers was the researchers' structured questionnaire titled Biology Teachers' Social awareness Questionnaire (BIOSSEQ). The instrument was validated by experts and tested for reliability using Cronbach alpha method, in which a reliability coefficient of .76 was obtained. Descriptive statistics, namely, mean and standard deviation with scatter plots were used to answer the research questions. Results of the study revealed a positive relationship between Biology teachers' Social awareness and students' performance in Biology. The researchers recommended among others that teachers' Social awareness should be monitored via periodic appraisal and be improved via counselling services in secondary schools as it is evident that Social awareness of teachers influences students' performance in Biology.

Key words: Biology, Emotional Intelligence, Performance, Social Awareness.

INTRODUCTION

Education is an essential tool for human and national growth and development. This necessitates the fact that quality of education to be given to citizens of a country especially at the secondary school level must be such that can teach them the needed skills for individual and national development. This therefore implies that, quality education is a necessity to build a responsible citizen who can drive the nation's economy and can also compete favourably in terms of knowledge-based globally. This requires effectiveness and high level of efficiency of the school administrators and teachers during teaching and learning (Chidobi & Eze, 2016). To achieve this quality, teachers' sound and high level of emotional intelligence is a necessity.

It is on the basis of the foregoing that the quality of education provided to students at secondary school level has become an issue of great concern to all stakeholders especially in the light of declining performance of students at Senior School Certificate Examination (SSCE). Performance as used in this study refers to the cumulative result of promotion examination (from SSI to SSII) obtained by the students at the end of the one academic session. The continuous decline in students' performance in science subjects especially in biology has raised issues of quality education among stakeholders in education and members of the public (James, 2018). Stakeholders and members of the public are focusing on the organization of classroom activities and management of the behavior of students which are the crucial and essential responsibilities of teachers. This is because teachers are the major implementers of the school curriculum. This implies that, an

individual or group of individuals teachers hold a crucial position in the educational sector. Therefore, classroom teachers need to possess some specific emotional intelligence skills especially the Social awareness skills to be able to effectively manage students' behavior as well as to provide and sustain high standard of teaching and learning in schools. Effective and meaningful teaching and learning takes place in a classroom. A classroom is an environment where teaching and learning occurs and also where the success or failure of the teaching and learning process is measured by teachers (Obineme, 2018). This indicates that a teacher must be well skilled in terms of subject knowledge, pedagogical knowledge as well as Social awareness to be able to achieve the educational objectives. It is on this basis that, this study aimed at focusing on the relationship between teachers' Social awareness and students' performance in Biology.

Social awareness is the ability of an individual to enter and sustain interpersonal relationships satisfactorily with other people. According to Sarrionandia *et al*, (2018). Social awareness emphasizes on social relationships and social influence. Teachers with good sociability (Social awareness) have better social interaction with others. They have good listening skills and can communicate clearly and confidently with students from diverse backgrounds. Teachers with Social awareness empathize with others, comprehend and accept the emotions of others. They always reason and see things from another person's point of view and therefore develop a stronger bond and understanding with them.

Individuals with high level of Social awareness can contribute positively to the socialization of their communities. By implication, a teacher with high level of Social awareness can contribute positively to the effectiveness of teaching and learning process. However, teachers with low Social awareness are bound to find it very challenging to deal with problems responsible for students' poor performance. This could result to undermining their effective performance in the classroom as a teacher. For instance, Jain *et al*. (2018) believes that teachers that lack sound Social awareness are always faced with challenges in making some adjustments of bringing about effective teaching and learning. This implies that such a teacher is most likely to fail in handling the demands of classroom as well as the demands of school extra-curriculum activities effectively. Most importantly, it may not be out of place to say that a teachers with little or no Social awareness will not be able to achieve even personal goals in life and not only the classroom or school activities. By implication, the objectives of secondary education can only be effectively achieved in the classrooms where there are teachers with high level of teachers' Social awareness. The reason is because, Social awareness is one of the teacher variables that have direct influence on students' performance at any standardized examination. To maintain appropriate standards in secondary schools, there is a need to effectively use relevant, skilled and high socially awared teachers. This is one of the reasons why this study was designed to have a look at the relationship between Biology teachers' Social awareness and secondary school Biology students' performance in Minna, Niger State.

Statement of the Research Problem

Biology teachers are expected to possess certain qualities that will enable them to deliver curriculum content effectively and assist students in developing their basic traits through the teaching and learning processes. Lack of some of those qualities among some teachers is one of the factors responsible for the low or poor performance of the students. The low or poor performance of secondary school Biology students at Senior School Certificate Examinations (SSCE) has continued to be a major concern for the government and other stakeholders in education (James, 2018). The low grades obtained by most Biology students at senior school certificate examinations have jeopardized their chances of getting admission into higher institutions of learning particularly Nigerian Universities. In order to address this challenge, Government through ministry of education has adopted several interventions such as organizing seminars, conferences and workshops for teachers all targeted at improving teaching and learning as well as students' performance at final SSCE examinations generally. Despite these interventions, there has not been a significant improvement in students' performances in biology (WAEC, 2021). This prompted Abidoye (2022) to conducted a research study on rationale for students' poor performance and reported that, factors responsible for low performance of students in biology include: students' factors, government factors and teachers' factors. One of the major

teacher factors according to the author is teachers' Social awareness.

Teachers' Social awareness is critical as it has been reported to have both positive and negative effects on students' performance at final examination. This implies that if classroom teachers positively utilize Social awareness, it will result in high academic performance by students. Conversely, if it is negatively utilized, it will lead to low academic performance (Amalu & Okon 2018). However, many Biology teachers may not be aware of how their level of Social-awareness inhibits or enhances students' participation in classroom activities and hence jeopardized their academic performances in the classroom. Based on the foregoing, this research study sought to investigate the relationship between Biology teachers' Social awareness and secondary school Biology students' performance in Minna, Niger State.

Objectives of the Study

This study was designed to investigate the relationship between Biology teachers' Social awareness and secondary school Biology students' performance in Minna, Niger State. The specific objective of the study was to determine: the relationship between secondary school Biology teachers' Social awareness and Biology students' performance

The following corresponding research question was raised to guide the study. what is the relationship between secondary school Biology teachers' Social awareness and Biology students' performance?

This study was conducted in Minna, Niger State using Biology teachers and students. Biology teachers' responses to the questionnaires and Biology students' immediate past promotion examination result (conducted by ministry of education) were correlated during the study to establish the relationship between teachers' Social awareness and students' performance. This correlation was done because, teachers' Social awareness is a critical teachers' factor that has been reported to have both positive or negative influence (depending on how it is used by a teacher) on students' performance at final standardized examination. This study is therefore interested in confirming the above finding. Findings of this study would be significant to students, teachers, parents, school administrators, curriculum planners, researchers and ministry of education.

Empirical studies reveal that, Katanani and Sakarneh (2021) examined the influence of self-awareness, self-regulation, self-motivation, self-empathy, and self-social skills on the academic achievement of gifted students. One hundred fifty (male and female) students were involved in the study. Ten teachers and 30 gifted students were used for the study. Questionnaires and interview were the instruments used for data collection. Multiple regressions were used to analyze and interpret the data on the influence of emotional intelligence (self awareness, self regulation, motivation, empathy, and social skills) on the academic achievement of gifted students. The study further applied the effect size to determine the emotional intelligence elements that could best predict students' academic achievement. In addition, a t-test was adopted to identify the significant difference in emotional intelligence among the students based on gender. Results of the study demonstrated a significant effect of emotional intelligence on academic achievement of the students and also a difference in the emotional intelligence level between male and female students. In addition, MacChann *et al.* (2020) examined the role emotional intelligence (social-awareness, self-awareness, self-motivation and self-empathy) in the classroom instruction of high school mathematics teachers. The study was qualitative in design and was aimed at obtaining opinions and behaviours of the teachers in the school. Five mathematics teachers from five high schools in Pretoria, Gauteng were used for the study. Data was collected through semi-structured interviews. Content analysis was employed for the study. The findings revealed that Social-awareness or emotional intelligence in the classroom plays a major role in dealing with or addressing the day-to-day challenges face by teachers during classroom instruction. The results also showed that teachers must have specific Social-awareness skills to cope with classroom pressure and challenges. It also revealed that, creating or imparting values such as trust, self-respect and

confidence to learners is not an easy task and that, some learners cannot cope with mathematics. The study also revealed that, giving the learners all the necessary support and instilling on discovering these kinds of values by learners play a pivotal role in facilitating effective teaching in classroom. In addition, having positive relationships between teacher and learner enhances learners' performance, thereby benefiting the learners, the school and the community in general.

On the other hand, Udo and Ukpong (2016) investigated the influence of self and social awareness on Business Education students' academic performance in Federal Universities in South-South, Nigeria. Two objectives, two research questions and two corresponding null hypotheses guided the study. The ex-post facto was used for the study. The study population consisted of all the 513 students in their second and third year of studies in the Business Education programme in the three Federal Universities in South-South, Nigeria that offer Business Education programme. A sample of 356 Business Education students from two entire years was selected for the study using a stratified sampling technique. The validated instrument (Emotional Competency Inventory) was used for data collection which was analyzed using Cronbach Alpha and reliability coefficient of .76 was obtained. Mean and standard deviation was used to answer the research questions while multiple regression analysis was used to test the null hypotheses at a .05 level of significance. The result revealed a significant influence of self-awareness and social-awareness on Business Education students' academic performance. It is recommended among others that, a balanced combination of emotional and cognitive strategies be employed in training students. This will help facilitate the identification, recognition and development of their Social-awareness or emotional skills which will contribute to their personal, academic and career success.

Furthermore, Chukwuka and Ezeudu (2014) investigated the influence of Social-awareness (emotional intelligence) on students' achievement in chemical quantitative problem solving in the Nnewi Education zone. The purpose was to determine the influence of emotional intelligence, gender and school location on students' achievement in chemical problem solving. Seven research questions and their corresponding hypotheses were formulated to guide the study. The study adopted an ex-post-facto design. The study population was 757 SS2 students from 49 government secondary schools in the Nnewi Education zone. The sample for the study was 304 SS2 chemistry students comprising 135 males and 169 females. Two-stages of sampling consisting of simple random and stratified sampling techniques were used to select the schools for the study. An Emotional Quotient Inventory (EQI) and a Chemistry Achievement Test (CAT) were used for data collection. Data were subjected to descriptive and inferential statistical analysis using means, standard deviation and Analysis of variance (ANOVA). Means and standard deviation of scores were used to answer the research questions, and the null hypotheses were tested using one-way ANOVA and two-way ANOVA. The results revealed a significant difference among the problem-solving mean achievement scores of students of high, medium and low Social-awareness (emotional intelligence) students in chemistry. Results also showed a significant difference between chemistry achievements mean scores of male and female students and a significant difference between chemistry achievements mean scores of students in rural and urban areas. It was concluded that Social-awareness / emotional intelligence influences students' achievement in chemical quantitative problem solving; male students achieved relatively better than female students and students from rural schools achieved somewhat better than students from urban schools.

As a further study to the foregoing empirical studies, the current study aimed at determining the relationship between Biology teachers' Social-awareness and secondary school biology students' performance in Minna, Niger State

RESEARCH METHODOLOGY

The research design employed for this study was correlational design using the descriptive survey research method. The correlational design was used because it enables researcher to determine how two or more



variables are related to each other in a given group of respondents.

The population for the study comprised of all the one thousand, one hundred and three (1,103) Biology teachers in Niger State public secondary schools. Students' population comprised of all the five thousand, two hundred and eighteen SSII Biology students in Niger State public secondary schools during 2022/2023 academic session. Purposive sampling technique was used to select ten (10) coeducational secondary schools from Minna that were used for the study. All the Biology teachers in the ten sampled schools totaling one hundred and five (105) formed the Biology teachers' sample that was used for the study. The one hundred and five (105) Biology teachers' sampled made up 10% of the total population of Biology teachers which is in line with Krejcie and Morgan recommendation.

On the students' sampled for the study, only SS 2A classes were purposively selected from each of the ten sampled schools. Total of the Biology students in all the purposively selected SS 2A classes was five hundred and twenty (520). The five hundred and twenty (520) students formed the Biology students' sample that was used for the study. This is because it represented 10% of the total population of Biology students.

Records of the existing immediate past promotion examination result of Biology students (from SSI to SSII) was used as students' data. Researchers' structured questionnaire was used to collect Biology teachers' responses. The result of 520 students was thereafter correlated with responses from 105 Biology teachers from the 10 sampled schools to determine their relationship. This correlation was carried out purposely to further confirm if teachers' social awareness really influence students' performance as reported by Abidoye (2022). Predictor variable of the study is Biology teachers' Social awareness while the criterion variable is Biology students' performance (cumulative result of the immediate past promotion examination from SSI to SSII).

Instrument used for data collection is the researchers' structured questionnaire titled Biology Teachers' Social awareness Questionnaire (BIOSSEQ). The questionnaires consist of two sections A and B. Section A is concerned with the respondents' bio-data for the study while section B is made up of fifteen (15) items on Social-awareness. The fifteen (15) items were structured on each of the three constructs of emotional intelligence. The items were structured based on five-point Likert scale with response mode of Strongly Agree (SA=5), Agree (A=4), Undecided (UD=3), Disagree (D=2), and Strongly Disagree (SD=1). The instruments were adapted by the researchers and validated by two experts in area of Biology education as well as in the area of test and measurement.

Reliability coefficient of the questionnaire was determined through a pilot test involving 20 Biology teachers that were not used for the study. Chronbach alpha was the statistical tool used to analyze the data collected during pilot test and reliability coefficient of .76 was obtained. This value indicates that the instrument is consistent and reliable to be used for the study. During data collection, the researchers visited all the sampled schools, seek permission from the school administrators to carry out the research and inform the respondents of the purpose study. Vice Principal academic (VP II) of each of the sampled schools were used as research assistants and were also properly briefed about the study. The instrument was administered to Biology teachers teaching in each of the sampled schools with the help of research assistants. Data collected through questionnaires was correlated with the performance scores (immediate past promotion examination results from SSI to SS II) of all the Biology students of all the sampled schools.

The scattered plots and standard deviation were used to answer the research questions raised to guide the study. Statistical Package for Social Science (SPSS) version 21.0 was used for the analysis.

RESULTS AND DISCUSSION

Answer to the Research

Research Question One: What is the relationship between Biology teachers' Social awareness and Biology students' performance? This research question was answered using scatter plot as shown in figure 1

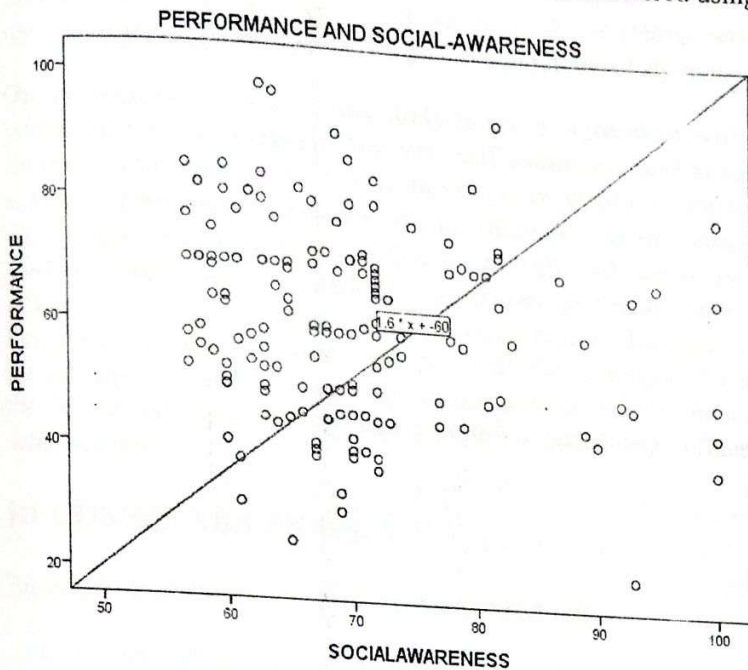


Figure 1 Scatter plot relationship between Biology teachers' Social awareness and Biology student's performance.

Figure 1 is a Scatter plot of the relationship between Biology teachers' Social awareness and Biology student's performance. The scatter plot indicates that there was a positive relationship between the two constructs as indicated by the trend line.

This finding was supported by the mean and standard deviation of the two constructs as shown in table 1

Table 1: Mean and Standard Deviation of Social awareness and Biology Students' Performance

Variable	N	\bar{x}	SD
Performance	520	60.87	15.079
Social-awareness	105	69.91	10.032

Table 1 shows the mean and standard deviation of Biology teachers' Social awareness and Biology students' performance. The findings show a computed mean score of 60.87 with and standard deviation of 15.079 for students' performance in Biology and a mean score of 69.91 with a standard deviation of 10.032 for Biology teachers' Social awareness.

FINDINGS OF THE STUDY

The data collected was analysed and it was found that:

There was a positive relationship between Biology teachers' Social awareness and Secondary School Biology students' performance.

DISCUSSION OF THE FINDING

Finding of this study is agreement with the findings of Yahaya *et al* (2012) who examined the impact of Social awareness or emotional intelligence on the academic performance of secondary school students and reported that, Social awareness is a positive predictor of students' academic performance.

On the contrary, finding of this study is not in agreement with the findings of Kashani *et al* (2012) who investigated the relationship between self awareness and academic performance of diploma and degree students and revealed that, Social awareness or emotional intelligence is not a good predictor of students' academic performance. Finding of this study is also in consonant with the finding of Udo and Ukpogon (2016) who investigated the influence of self and social awareness on Business Education students' academic performance in Federal Universities in South-South, Nigeria. The result revealed a significant influence of self awareness and social awareness on Business Education students' academic performance. Result of this study is also in consonant with the findings of Chukwuka and Ezeudu (2014) that investigated the influence of emotional intelligence on students' achievement in chemical quantitative problem solving in the Nnewi Educational zone and reported a significant influence of emotional intelligence on students' achievement.

RECOMMENDATIONS

Based on the above finding, it is recommended that:

1. Curriculum planners should incorporate teachers' Social awareness in curriculum of all the teacher training institutions
2. School administrators should employ qualified Biology teachers and give them sound training on the concept of teachers' Social awareness as a major component of teacher variables that determines students' performance at the final examination.

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