

# Impact of Biology Teachers on the Students' Performance in Senior Secondary Schools in Osun State, Nigeria

Omosholape Florence Abidoye <sup>1\*</sup>

<sup>1</sup> University of Ilorin, Ilorin, NIGERIA

Received November 11, 2018 • Revised December 5, 2018 • Accepted December 15, 2018

## ABSTRACT

This study examined the impact of biology teachers on the performance of students in secondary schools in Osun State, Nigeria. This study sample included forty-eight (48) secondary schools, selected by random sampling technique. The researcher designed teachers' questionnaire which were administered to one hundred forty-five (145) biology teachers. Researcher-designed validated questionnaire was used to elicit information from the respondents on the impact of biology teachers to the performance of students. Three research questions and two research hypotheses were formulated. Frequency counts and t-test statistics were used to analysis the data collected. Findings of this study revealed that the impact of biology teachers to teaching in Secondary Schools was significant. It was also revealed that there was a significant existence based on the gender, but it was revealed that the impact of biology teachers on students' performance in secondary schools was not significant based on years of teaching experience. Based on the research findings, recommendations were made on how the biology teachers would have a positive impact on students' performance in senior secondary schools.

**Keywords:** Impact of Biology, Teachers, students' performance, Senior Secondary Schools.

## INTRODUCTION

Biology is a unique branch of science that deals with the study of life. It is the branch of science that involves the study of the life of plants, animals, humans, and any other types of living organisms (Akanji, Babunmi & Bewaji, 2003). Biology can also be defined as the natural science concerned with the study of life and living organism, including their structures, function, growth, origin, evolution, distribution, and taxonomy. However, biology is broadly divided into zoology, botany, and etc. Zoology is the branch of biology that related to the animal kingdom including their structure, embryology, evolution, classification, habit, and distribution of all animals both living and extinct and how they interact with their ecosystem while botany is the study of plant life. (Grejson, 2013).

Students perform poorly in biology because the biology classes are usually too large and heterogeneous in terms of the ability level. In addition, laboratories are ill-equipped, and the biology syllabus is over loaded (Ahmed, 2008; Ajayi, 1998). Most teachers fail to realize that they are very vital in educational effectiveness at the classroom instructional level. How teachers teach, behave, and interact with students in the classroom or during teaching are sometimes more vital than what they teach. It is therefore clear that a teacher's way of thinking and attitude determines his/her behaviour and decision inside and outside of the classroom (Onoshakpokaiye, 2011).

---

This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>).

✉ [abidoye.fo@unilorin.edu.ng](mailto:abidoye.fo@unilorin.edu.ng) (\*Correspondence)

Gender determines what is expected, allowed, and valued in a woman or a man in a given context. The differences in societal value of men and women in terms of responsibilities, activities undertaken, and access and control over resources as well as decision taken are all gender based. Abiri and Ugborugbo (2008) examined the influence of gender on the productivity of secondary school teachers in Delta State, Nigeria. The results of the analyses revealed that although there was no significant difference in the productivity of male and female teachers, the male teachers were generally more productive than their female counterparts and that female teachers were more influenced by location than the male teachers.

Udousoro (2012) viewed the effect of gender and mathematics ability on academic performance of students in chemistry. The results of the tests indicated that gender does not have any significant effect on the academic performance of students in chemistry. Okoro, Ekanem and Udoh (2012) investigated the effect of teachers' gender on the academic performance of children in primary schools in Oyo metropolis, but the results showed that teacher-pupil gender interactions do significantly affect pupils' academic performance.

Teaching experience is a vital tool in the science teaching and learning situations. Experience can be said to be the attitude or skill acquired by the teacher through his perception and participation in instructional programs. The experience of the teachers will help them to be able to cope and adapt to change in the educational programs (Lawal, 2011). Hanushek, Rivkin and Kain (2005) observed the market for teacher quality and the finding indicated that students of experienced teachers achieved better than students of new teachers (those with one to three years of experience). The Centre for Public Education (2005) stated that research has been consistent in finding positive correlations between teaching experience and higher students' achievement. Teachers with more than five years teaching experience were found to be the most effective while inexperience is shown to have strong negative effect on students' performance.

#### Purpose of the Study

This study determined the impact of biology teachers on students' performance in senior secondary schools in Osun State, Nigeria.

Specifically, this study examined;

1. the impact at which biology teachers made on the students' performance in the senior secondary school in Osun State,
2. the impact of gender of the biology teachers on the students' performance in the senior secondary school in Osun State,
3. the impact of years of teaching experience of the biology teachers on the students' performance in the senior secondary school in Osun State.

#### Research Questions

1. What is the impact of gender of the biology teachers on the students' performance in the senior secondary school in Osun State?
2. Does the gender of the biology teachers have impact on students' performance in the senior secondary school in Osun State?
3. Is there any impact of years of teaching experience of biology teachers on students' performance in the senior secondary school in Osun State?

#### Research Hypotheses

1. There is no significant differences in the impact of gender of the biology teachers on students' performance in the senior secondary school in Osun State.

2. There is no significant differences in the impact of years of teaching experience of the biology teachers on students' performance in the senior secondary school in Osun State.

## METHODOLOGY

This study had been carried out in senior secondary school in Osun State, Nigeria. This included biology teachers in all Secondary Schools located in Osun State, Nigeria. Studies were carried out in forty- eight-eight (48) secondary schools in Osun State. The total numbers of 145 biology teachers were involved in the study. Variables that were tested in the study were: gender, years of teaching experience ,and impact of the biology teachers to the students' performance was determined in the studies.

The minimum of one hundred and forty five (145) biology teachers were involved in the study. A researcher-designed teachers' questionnaire was used as the instrument for the collection of data from science teachers in the sampled schools.

## DATA ANALYSES AND RESULTS

### Research Question One

What is the impact of gender of the biology teachers on the students' performances in the senior secondary school in Osun State?

**Table 1:** Mean Score and t- test for testing impact of biology teachers' on the students' performances in Osun State, Nigeria

	Number of respondents	Mean Score	Std. Deviation	T	Df	p-value
Total	145	89.54	52.02	22.90	144	0.00

Table 1 shows the numbers of responses of Biology teachers' impact to the performance of students in Osun State, Nigeria. The total number of respondents was 145 biology teachers. The mean score was 89.54. The impact of biology teachers' on the performance of students was significantly positive since p-value (0.00) < 0.05 (t =22.90; df 144 and p-value 0.00). This shows that Biology teachers in Osun State, Nigeria. Generally Biology teachers had positive impact on the students' performance

### Research Question Two:

Does the gender of the biology teachers have an impact on students' performances in the senior secondary school in Osun State?

**Table 2:** Mean Scores and t-test for testing impact of biology teachers' on students' performances based on gender in Osun State, Nigeria

Gender	No of Respondents	Mean Score	Standard Deviation	Std. Error Mean	t value	df	p-value
Male	92	76.73	39.55	4.12	1.42	144	0.04
Female	53	66.51	45.60	6.26			

Table 2 shows that the mean scores for males was 76.73 and for females was 66.51 and that no significant differences existed between the score of male and female biology teachers' impact on the students' performance since the p-value (0.04) < 0.05. The null hypothesis 1 (Ho1), which states that there is a significant difference in the impact of gender of the biology teachers on students' performances in the senior secondary school in Osun State based on gender, is rejected.

### Research Question 3:

Is there any impact of years of teaching experience of biology teachers on students' performances in the senior secondary school in Osun State?

**Table 3:** Mean Scores and t-test for testing impact of biology teachers' on the students' performances based on years of teaching experience in Osun State, Nigeria

Experience	No of Respondents	Mean Score	Standard Deviation	Std. Error Mean	T	Df	p-value
Less experience (0-5)	60	72.02	43.24	5.58	0.23	144	0.51
Experience (above 5years)	85	73.68	41.34	4.48			

Table 3 shows the mean scores and reveals that there was a significant difference between the experienced and less experienced biology teachers' impact to the students' performances in Osun State, Nigeria since the p-value (0.51) > 0.05. The mean scores range between 72.02 and 73.68. The null hypothesis 2 (Ho2), which states that there is no significant differences in the impact of years of teaching experience of biology teachers' on students' performance in the senior secondary school in Osun State, is not rejected.

### Summary of Major Findings

The research findings of this study as obtained from t-test based on the research questions and hypotheses are summarized as follows:

1. Biology teachers had a positive impact on students' performances in senior secondary school in Osun State, Nigeria.
2. The impact of biology teachers on the students' performances in the secondary school based on gender was significant.
3. The impact of biology teachers on students' performances in the secondary school based on their years of teaching experience was not significant.

### DISCUSSION OF FINDINGS

In this study, it was found out that impact of biology teachers to students performance in Osun State, Nigeria was significant based on their responses. Biology teachers had a positive impact on students' performances. These may be due to the fact that they are key to students' success because they play an important role in imparting the knowledge and equipping the students to be useful to themselves and the society.

This is in agreement with the findings of Afolabi (2007) who examined the influence of the science teachers' attitude and gender factor as determinant of pupils' performance in primary science and found out that the attitude of science teachers have greater effect on the students' academic performance. It was established in this study that there was a significant difference in the impact of biology teachers on students' performance based on their gender. This may be hinged on the fact that intelligence is gender based.

This study is in agreement with the finding of Okoro, Ekanem and Udoh (2012) who investigated the effect of teachers' genders on the academic performance of children in primary schools in Oyo metropolis. The results showed that teacher-pupil gender interactions do significantly affect pupils' academic performance. Contradicted the finding of Abimbola and Abidoye (2013) on the views of Kwara State senior school Biology teachers on the status of ecology teaching in which they reported that there was no significant difference between the teaching of male and female science teachers.

It was found in the study that there was no significant difference in the impact of biology to students' performance in based on their years of teaching experience. This shows that experienced biology teachers had more positive impact on students' performance than the less-experienced biology teachers. It may be due to the fact that the more experienced and less experienced science teachers are able to concentrate on the most

appropriate way to teach particular topics to students who differ in their abilities, prior knowledge, and backgrounds. This finding is in agreement with the finding of Hanushek, Rivkin and Kain (2005) showed that students of experienced teachers achieved better than students of new teachers (those with one to three years of experience). Similarly, in some other studies, teaching experience was found to be related to students' achievement but that the relationship could not be ascertained to be linear. Also, agree with the finding of Abidoye (2017) observed the influence of gender and experience of senior school biology teachers on their ecology teaching in Kwara State. The findings showed that no significant difference existed in the experience and less experience biology teachers.

## CONCLUSIONS

Based on the findings of the study, the following major conclusions can be drawn. Biology teachers had positive impact on the students' performance in Osun State, and the impact of biology teachers to students' performance in Osun State based on their gender while the impact of biology teachers based on years of teaching experience was not significant in the analysis conducted.

### Recommendations

Based on the findings of this study, it is hereby recommended that;

1. Adequate instructional materials should be made available for biology teachers to further enhance their positive impact on the students' performance.
2. Both male and female science teachers should be encouraged by provision of special incentive for improvement on their impact on students' performance.
3. Less experienced biology teachers should be encouraged to acquire more professional experience in order to improve on their impact to students' performance.

## REFERENCES

- Abidoye, F. O. (2017). Influence of gender and experience of senior school Biology Teachers on their Ecology teaching in Kwara State. *Journal of Education and Instruction* 10 (1), 96-105.
- Abimbola, I. O. & Abidoye, F. O. (2013) Effect of qualification and experience of biology teachers on the status of ecology teaching in Kwara State. *Journal of Education and Practice* 4 (24), 1
- Abiri, A. A.& Ugborugbbo, N. M.(2008). An examination of genders' influence on teachers' productivity in secondary school. *Journal of social science* 17, (3), 185-191.
- Afolabi, F. (2007). Teachers' attitude and gender factor as determinant of pupils' performance in primary science. *African Journals Online: www.ajol. Info* 3 (1), 326-332.
- Ahmed, M. A. (2008). Influence of personality factors on biology lecturers' assessment of difficulty levels of genetics concepts in Nigerian colleges of education. Unpublished PhD thesis, University of Ilorin, Ilorin.
- Ajayi, D. O. (1998). Community science: Implications for science teacher: Proceeding of the 39th Annual Conference of STAN.
- Akanji, C., Bababunmi, K., & Bewaji, N. (2003). Using new technology in creating excitement in Biology laboratory activities. *Educational Research and Review*, 3 (10), 11-15
- Grejson, S. (2013). Nature of Science; The complex interaction of systems of biological molecules. *International Journal of Science Education* 41(2), pp 411-422.

Hanushek , E. A., Rivkin , S. G., & Kain , J. F. (2005). The Market for teacher quality. Working Paper 11, 154. National Bureau of Economic Research. Cambridge, M. A.

Lawal, B. (2011). Characteristics of an outstanding biology teachers as viewed by biology teachers in Kwara State. Unpublished M.Ed Project, Department of Science Education, University of Ilorin, Ilorin.

Okoro, C. G., Ekanem, I. E., & Udoh, N. A. (2012). Teachers gender and the academic performance of children in primary schools in Uyo metropolis, Akwa Ibom state, Nigeria. *Journal of Education and Social Research* 2, (1), 268-273.

Onoshakpokaiye, E. O. (2011). The Influence of Teachers' Attitude on Students' Learning of Mathematics in Nigerian Secondary Schools. Institute of Education, Delta State University, Abraka, Delta State, Nigeria. *Journal of Research in Education and Society*. 2 (1), 15.

The Centre for Public Education (2005). Teacher quality and student achievement Research review. Retrieved March 12 2013 from <http://CentreforPubliceducation.org/site/c.kjlx15mP/WE/b.15/0983/k.2A6A/Teacher>

**<http://www.ejhbe.com>**