© IIJP 2026 | Volume 2, Issue 3, pp. 660-667 | ISSN: 2636-4484

PERCEIVED IMPACT OF WORK-LOAD ON TEACHING PERFORMANCE OF BIOLOGY TEACHERS IN MAKURDI LOCAL GOVERNMENT AREA, BENUE STATE

Dr. Joseph Olaiya Fatoki[1], Samuel Okanche[2] & Benedict Ojedor Onah[3],
[1, 2, & 3] *Department of Science and Mathematics Education, Rev. Fr. Moses Orshio Adasu University, Makurdi-Nigeria*
[1, 2 & 3] *jfatoki@bsum.edu.ng, Sokanche-pg26@bsum.edu.ng & boonah-pg26@bsum.edu.ng*

ARTICLE INFO
Article No.: 0463
Accepted Date: 10/07/2026
Published Date: 05/08/2026
Type: Research

ABSTRACT
This paper examines the influence of International Labour Organisation (ILO) on employment relations in Nigeria. It explores how ratified ILO conventions have impacted national labour law, trade unionism, occupational safety standards, collective bargaining, and other workplace rights and practices in Nigeria's formal and informal sectors. The paper used both primary and secondary data. A total of twelve interviews were conducted in different purposively selected organisations in Abuja, Aba, Nnewi, and Onitsha towns in March, 2025. Thematic data analysis technique was employed to analyse the data garnered from investigation of the interaction of ILO standards with national labour laws, their transformative potential, and implementation challenges. The study finds that Nigeria has made considerable progress in incorporating ILO core conventions into domestic legislation. Nonetheless, the impact on workplace conditions is limited due to gaps in enforcement of and compliance with these conventions, institutional weaknesses, limited resources and awareness, socio-cultural values, and economic pressures. The paper concludes by suggesting the ways for improved labour governance in Nigeria. These include full domestication of ILO conventions; strengthening institutional capacity for improved implementation and enforcement of labour laws; broadening awareness of workers' rights, labour standards, and employer obligations to achieve effective compliance; and expanding protection to vulnerable and informal workers.

Keywords: ILO conventions; Employment Relations; Enforcement; Informality; Unionisation; Decent Work.

Introduction

Science education is a pivotal domain that shapes the scientific literacy of individuals and communities, addressing both societal and environmental challenges. As highlighted by (Visnovska 2024), this emphasis on equipping students with critical thinking skills is essential in a world increasingly influenced by scientific issues, such as climate change and public health crises, shaping the academic and professional trajectories of biology students.

Biology is a branch of natural science that focuses on the study of living organisms and the processes that sustain life. It provides students with knowledge and skills that help them understand important issues related to health, genetics, environmental conservation, and disease prevention. The effective teaching of Biology requires both theoretical instruction and practical experiences that promote observation, investigation, and critical thinking. Through Biology education, learners develop a better understanding of themselves and their environment, making the subject essential for personal and societal development (Fatoki et al., 2026). Students' comprehension of the biological sciences is greatly influenced by their biology teachers. In order to create an inclusive classroom where students can interact meaningfully with biological concepts, effective biology instruction necessitates a solid grasp of biological concepts and the application of a variety of teaching strategies that accommodate various learning styles (Touchet & Branch, 2024). However, effective teaching and learning can be affected by factors such as inadequate teaching resources, insufficient laboratory facilities, inappropriate teaching methods, and excessive teacher workload.

Workload can be defined as the intensity or the extent of work assigned to an employee in a specific time frame (Inegbedion. 2020). It is the amount of work performed by an individual in a given period of time, or the average amount of work handled by an individual at a particular instant of time. The amount of work handled by an individual in an institution gives an estimate of the efficiency and performance of that institution. Workload assigned to a teacher as his/her job functions in the course of his/her teaching instruction delivery, ranges from lesson periods, population of students (classroom capacity), and the number of subjects to be taught by a teacher and the time assigned to each period, etc. The ability of teachers to manage these comprise of their effective teaching delivery. The workload for teachers should be properly designed as long as effective teaching outcome is expected. Evidence from a national survey by the RAND Corporation indicates that public school teachers work an average of approximately 53 hours per week, which is substantially higher than the average working week of other professionals. Excessive workload may reduce teachers' effectiveness, increase stress and burnout, and negatively affect instructional quality and job performance (Steiner et al., 2025). Teacher workload has emerged as a critical issue affecting the educational landscape, significantly influencing educators' well-being and job performance leading to burnout among teachers that causes reduced physical and emotional energy (Malik, 2019).

A teacher is not merely an instructor but a pivotal figure in the educational landscape, embodying knowledge, mentorship, and societal influence. The decision to become a teacher is influenced by factors such as pay, job security, social status, and the desire to positively impact future generations, highlighting the need for diverse representation within the profession (See, 2022). However, teachers experience stress due to their workload, including lesson planning, curriculum development, classroom management, assessment, record keeping, and other instructional and administrative responsibilities (Desouky & Allam, 2017). Consequently, stress in the teaching profession is a global phenomenon that reduces teachers' self-efficacy, job satisfaction, commitment, and morale while increasing burnout, thereby affecting the quality of education (Skaalvik & Skaalvik, 2016).

This study is anchored on the Job Demand-Control-Support (JDCS) Theory developed by Karasek and Theorell (1990), which posits that high job demands combined with limited control and inadequate social support can lead to job strain and reduced performance. In the

school setting, excessive workload may increase teachers' stress levels and negatively affect their effectiveness in carrying out instructional duties. Empirically the studied have consistently reported a relationship between workload and teachers' performance. Koko et al. (2023) found that workload significantly influences teachers' job performance in private secondary schools in Rivers State. Similarly, Umoinyang and Akpan (2020) identified large class size as a major challenge to effective teaching and teacher performance. Koko and Uzoho (2023) further reported that longer teaching periods are associated with lower levels of job performance among teachers. In addition, Ndioho and Chukwu (2017) found that teachers' workload affects students' academic performance in Biology, highlighting the indirect impact of teacher workload on learning outcomes. Despite these studies, limited empirical evidence exists on the perceived impact of class size and teaching periods on the teaching performance of Biology teachers in Makurdi Local Government Area, Benue State, creating the gap that this study seeks to fill.

Statement of the Problem

The problem of workload on the teaching performance of Biology teachers is a major concern in education. Excessive workload, including a high number of teaching periods, test construction and marking, and other assigned duties, can affect teachers' preparedness and effectiveness in teaching Biology. When teachers become overworked and stressed, their teaching performance, job satisfaction, and ability to engage students may decline, which can negatively influence students' academic outcomes. This study therefore seeks to examine the impact of workload on the teaching performance of Biology teachers.

Purpose of the Study

The purpose of this study is to investigate the Perceived Impact of work-load on teaching performance of biology teachers. Specifically, it sought to:

1. Determine influence of class size on teaching performance of secondary school teachers in Biology.
2. Find out the number of teaching periods and its perceived influence on teaching performance of biology teachers.

Research Questions

1. What influence does large class size have on the teaching performance of secondary school Biology teachers?
2. What influence does the number of teaching periods have on the teaching performance of Biology teachers?

Hypothesis

1. There is no significant influence of large class size on the teaching performance of secondary school Biology teachers.
2. There is no significant influence of number of teaching periods on teaching performance of teachers of biology.

Methodology

This study adopted a descriptive survey research design to examine the impact of workload on the teaching performance of Biology teachers in Makurdi, Benue State. The population comprised 1,045 secondary school teachers in 20 public secondary schools under the Benue State Teaching Service Board (TSB, 2022). A sample of 100 Biology teachers was selected using a multistage sampling technique involving purposive and simple random sampling. Data were collected using the Biology Teachers' Workload and Performance Questionnaire (BTWPQ), on a four-point Likert scale instrument. The instrument was validated by two experts in Science Education at Rev. Fr. Moses Orshio Adasu University, Makurdi (MOAUM) and its reliability was established using Cronbach's Alpha, which yielded a coefficient of 0.84 indicating that the instrument was reliable for the study. Following approval from the relevant school authorities, 100 copies of the questionnaire were administered directly

to the respondents. All the administered questionnaires were successfully retrieved after completion, representing a 100% return rate. Data collected were analyzed using mean and standard deviation to answer the research questions, while simple linear regression was used to test the hypothesis at the 0.05 level of significance. A criterion mean of 2.50 was adopted for decision-making, whereby mean scores of 2.50 and above were interpreted as accepted, while mean scores below 2.50 were interpreted as rejected.

Presentation of Results

Research Question One: What influence does large class size have on the teaching performance of secondary school Biology teachers?

Table 1: Mean and Standard Deviation of Biology Teachers' Responses on the Influence of Large Class Size on Teaching Performance

S/N	Item	N	Mean	SD	Decision
1	Large class sizes reduce the effectiveness of my Biology lesson delivery, making it difficult for me to perform optimally.	100	3.11	0.952	Agreed
2	Large class sizes contribute to excessive fatigue while teaching, making me underperform.	100	3.12	0.879	Agreed
3	I find it challenging to give individual attention to students in large Biology classes, which discourages me from giving my best.	100	3.02	0.995	Agreed
4	I am unable to adequately assess each student's understanding in large classes, thereby lowering my teaching performance.	100	3.13	0.981	Agreed
5	Managing large class sizes contributes to higher stress levels, making me less effective in teaching.	100	3.23	0.851	Agreed
6	Large class sizes make it difficult to maintain discipline in my Biology classes, thereby reducing my teaching performance.	100	3.10	0.980	Agreed
	Grand Mean	**100**	**3.12**	**0.940**	**Agreed**

The results presented in Table 1 show that Biology teachers agreed that large class size negatively influences their teaching performance. All the six items recorded mean scores above the criterion mean of 2.50, with means ranging from 3.02 to 3.23. The item with the highest mean score (M = 3.23, SD = 0.851) indicates that managing large class sizes contributes to higher stress levels, making teachers less effective. The lowest mean score (M = 3.02, SD = 0.995) suggests that teachers find it difficult to give individual attention to students in large Biology classes, which discourages them from giving their best. The grand mean of 3.12 (SD = 0.940) indicates that respondents generally agreed that large class size has a significant negative influence on the teaching performance of secondary school Biology teachers.

Research Question Two: What influence does the number of teaching periods have on the teaching performance of Biology teachers?

Table 2: Mean and Standard Deviation of Teachers' Responses on the Influence of Number of Teaching Periods on Teaching Performance in Biology

S/N	Item	N	Mean	Std. Deviation	Decision
7	My current number of teaching periods affects my ability to prepare adequately for Biology lessons, thereby reducing my teaching performance.	100	3.25	0.936	Agreed
8	The number of teaching periods affects my ability to perform other non-teaching responsibilities effectively.	100	3.08	0.961	Agreed
9	A high number of teaching periods increases my stress level, which negatively affects my teaching performance.	100	3.03	0.969	Agreed
10	Managing a large number of teaching periods leads to burnout, which reduces my teaching effectiveness.	100	2.82	0.978	Agreed
11	The number of teaching periods affects my ability to monitor students' individual progress effectively.	100	2.63	1.070	Agreed
12	The number of teaching periods affects my ability to provide timely feedback to students.	100	3.10	0.980	Agreed
	Grand Mean	**100**	**2.99**	**0.982**	**Agreed**

Table 2 presents the mean and standard deviation of teachers' responses on the influence of the number of teaching periods on their teaching performance in Biology. The mean scores ranged from 2.63 to 3.25, all of which are above the criterion mean of 2.50, indicating agreement with all the statements. The highest mean score (M = 3.25, SD = 0.936) recorded that number of teaching periods affects teachers' ability to prepare adequately for Biology lessons, thereby reducing their teaching performance. Also the number of teaching periods affects the ability to provide timely feedback to students (M = 3.10, SD = 0.980) and the ability to perform other non-teaching responsibilities effectively (M = 3.08, SD = 0.961). Teachers also agreed that a high number of teaching periods increases stress levels (M = 3.03, SD = 0.969) and that managing many teaching periods leads to burnout (M = 2.82, SD = 0.978). The least-rated item, although still agreed upon, was that the number of teaching periods affects teachers' ability to monitor students' individual progress effectively (M = 2.63, SD = 1.070). The grand mean of 2.99 indicates that teachers generally agreed that the number of teaching periods has a considerable influence on their teaching performance in Biology.

Hypothesis One: There is no significant influence of large class size on the teaching performance of secondary school Biology teachers.

Table 3: Simple Linear Regression Analysis on the Influence of Large Class Size on the Teaching Performance of Secondary School Biology Teachers (N = 100)

Predictor Variable	R	R^2	Adjusted R^2	β	t	F	Sig. (p)	Decision
Large Class Size	.562	.316	.309	-.562	-6.728	45.264	.000	Reject H_0

Table 3 presents the results of the simple linear regression analysis on the influence of large class size on the teaching performance of secondary school Biology teachers. The result shows a moderate relationship between large class size and teaching performance (R = .562). The coefficient of determination (R^2 = .316) indicates that 31.6% of the variation in teachers' teaching performance is explained by large class size, while the remaining 68.4% is explained by other factors not included in the study. The regression model was statistically significant (F

= 45.264, p = .000). Moreover, the negative beta coefficient (β = -.562, t = -6.728, p < .05) indicates that as class size increases, teachers' teaching performance decreases. Since the p-value is less than the 0.05 level of significance, the null hypothesis was rejected. Therefore, it was concluded that large class size significantly and negatively influences the teaching performance of secondary school Biology teachers in Makurdi, Benue State.

Hypothesis Two: There is no significant influence of the number of teaching periods on the teaching performance of Biology teachers.

Table 4: Simple Linear Regression Analysis on the Influence of Number of Teaching Periods on the Teaching Performance of Biology Teachers (N = 100)

Predictor Variable	R	R^2	Adjusted R^2	β	t	F	Sig. (p)	Decision
Number of Teaching Periods	.518	.268	.261	-.518	-5.995	35.944	.000	Reject H_0

Table 4 presents the results of the simple linear regression analysis on the influence of the number of teaching periods on the teaching performance of Biology teachers. The findings reveal a moderate relationship between the number of teaching periods and teachers' teaching performance (R = .518). The coefficient of determination (R^2 = .268) indicates that 26.8% of the variation in teaching performance is explained by the number of teaching periods, while the remaining 73.2% is explained by other factors not included in the model. The regression model was statistically significant (F = 35.944, p < .001), indicating that the number of teaching periods significantly predicts teachers' teaching performance. The standardized regression coefficient (β = -0.518, t = -5.995, p < .001) shows a significant negative influence of the number of teaching periods on teaching performance. This implies that an increase in the number of teaching periods is associated with a decrease in teachers' teaching performance. Since the p-value (.000) is less than the 0.05 level of significance, the null hypothesis is rejected. Therefore, it is concluded that the number of teaching periods has a significant negative influence on the teaching performance of Biology teachers.

Discussion of Findings

The findings of this study revealed that large class size has a significant negative influence on the teaching performance of secondary school Biology teachers. Teachers agreed that overcrowded classrooms increase stress and fatigue, reduce lesson delivery effectiveness, limit individual attention to students, and make classroom management and assessment more difficult. The regression analysis further confirmed that large class size significantly predicts teaching performance (R = .562, R^2 = .316, β = –.562, F = 45.264, p < .05), indicating that increases in class size lead to reduced teaching performance. This finding is consistent with Umoinyang and Akpan (2020), who identified large class size as a major challenge to effective teaching, and Koko et al. (2023), who reported that increased workload significantly reduces teachers' job performance.

The study also found that the number of teaching periods negatively influences the teaching performance of Biology teachers. Teachers agreed that excessive teaching periods reduce lesson preparation, increase stress and burnout, and limit effective monitoring of students and timely feedback. The regression result (R = .518, R^2 = .268, β = –.518, F = 35.944, p < .05) confirmed that an increase in teaching periods significantly reduces teachers' performance. This finding agrees with Koko and Uzoho (2023), who found that longer teaching periods lower teachers' job performance, and Ndioho and Chukwu (2017), who reported that teachers' workload negatively affects students' academic performance in Biology through its impact on instructional effectiveness. The consistency between the present findings and previous studies suggests that reducing teachers' teaching loads and ensuring a balanced distribution of teaching periods would improve instructional effectiveness, enhance teachers' well-being, and ultimately promote better learning outcomes in secondary school Biology.

Conclusion

The study concluded that large class size has a significant negative influence on the teaching performance of secondary school Biology teachers. Teachers reported that overcrowded classrooms increase stress, reduce the effectiveness of lesson delivery, limit individual attention to students, and make classroom management more difficult. The findings further showed that an excessive number of teaching periods adversely affects teaching performance by reducing time for lesson preparation, increasing stress and burnout, and limiting effective feedback to students. The performance of biology teachers was found to be negatively impacted by both large class numbers and heavy teaching loads, underscoring the necessity of reasonable teaching schedules and manageable class sizes in secondary schools.

Recommendations

1. School administrators should reduce overcrowding in Biology classrooms by providing additional classrooms and employing more Biology teachers. This recommendation is based on the finding that large class size significantly reduced teachers' effectiveness, increased stress levels, and limited individual attention to students.
2. School principals should ensure a fair distribution of teaching periods among teachers to prevent excessive workload. This recommendation is linked to the finding that a high number of teaching periods significantly reduced lesson preparation, increased burnout, and negatively affected teaching performance.
3. Future studies should employ larger and more representative samples drawn from multiple local government areas or states to improve the generalizability of findings. The present study was limited to 100 Biology teachers in Makurdi, which may not fully represent the experiences of Biology teachers in other settings.

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