
**CONTEXTUAL FACTORS, PERCEIVED CHALLENGES, AND THE
INFLUENCE OF THESE FACTORS ON ACADEMIC PERFORMANCE
AMONG GRADUATES OF THE SCHOOL OF HEALTH
INFORMATION MANAGEMENT, ILE-IFE, NIGERIA.**

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Article Received: 25 May 2026

Article Revised: 14 June 2026

Published on: 03 July 2026

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DOI: <https://doi-org/101555/ijrpa.1372>

ABSTRACT

Background: Both instructional support systems and contextual learning conditions have an impact on academic performance. Although tutorial participation has been widely accepted in order to enhance the learning outcomes, the same may also be influenced by contextual factors like accessibility of resources, institutional support and perceived learning challenges. This paper analyzed the contextual, perceived challenges and how they affect academic performance among the graduates of the School of Health Information Management in Ile-Ife, Nigeria.

Methods: A descriptive design based on a cross-sectional design was adopted among 81 graduates who were selected using the complete enumeration method. The structured questionnaires were utilized to collect data on access to study resources, peer collaboration, study environment, institutional support, and perceived challenges, with the data about academic performance coming out of institutional records. The measurement of responses was made through the Likert scales and frequency distributions. Multiple regression analysis in SPSS version 30.0 at $p < 0.05$ was used in analyzing quantitative data and the same was applied in analyzing qualitative data in terms of focus group discussions.

Results: Results indicated that moderately to strongly perceived access to study resources, tutor competence, peer collaboration, personal motivation, and study environment were perceived to have moderate to strong effects on academic performance. CBT materials (40.0% greatly, 23.8% extremely) and tutor competence (49.4% greatly, 22.2% extremely), peer collaboration (38.3% greatly, 22.2% extremely), personal motivation (39.5% greatly, 34.6% extremely), and study environment (42.0% greatly, 19.8% extremely) were all rated highly. Although these positive perceptions exist, the multiple regression analysis showed that the contextual factors were not significantly correlated with academic performance ($R^2 = 0.066$; Adjusted $R^2 = 0.003$; $F = 1.045$; $p = 0.398$), and none of the individual predictors were significantly correlated with academic performance.

Lecturer inconsistency and lateness (28.8%), poor adherence to schedules (26.0%), difficulty in understanding complex concepts (12.3%), failure to cover all topics (11.0%), high transportation costs (9.6%), and economic constraints (8.2%), were the most reported challenges. Nevertheless, a statistically significant positive change in academic performance was observed after the participation in the tutorials ($t(66) = -16.666$, $p = 0.001$), with very large effect size (Cohen $d = -2.036$). The qualitative results also indicated that the collaboration with peers, structured tutorials, and supportive learning environments contributed to better understanding, confidence, and exam preparedness, but gender was not regarded as a significant factor that could affect performance.

Conclusion: Despite the fact that the contextual factors and challenges perceived were highly rated and influenced the learning experience, they did not significantly predict academic performance. Nevertheless, there was a significant positive effect of tutorial participation on academic outcomes and this implies that the contextual factors play a role as enabling conditions but not as direct determinants of performance.

RECOMMENDATION: Tutorial programmes should be strengthened by institutions through improving organizational efficiency, lecturer consistency, learning resource adequacy, and peer collaboration and well-organized teaching delivery to improve the outcomes of academic performance.

1. Background of the Study

Academic performance refers to the process through which students attain the desired outcomes of the learning process. Academic performance is widely considered to be one of the most important indicators of the quality of education, where the ability to achieve the

desired outcomes of the learning process is considered a key indicator of the quality of education. Nonetheless, it has been demonstrated that the academic performance of the students in most developing countries, including Nigeria, is still below the global average (1). Student achievement in higher education is affected by the instructional strategies, as well as other contextual conditions such as learning environment, resource availability, and other institutional support frameworks (2). These contextual issues are important in influencing the manner in which students expose themselves to learning opportunities such as tutorial programs.

Tutorials have been extensively embraced as an academic support mechanism in enhancing learning outcomes through guided, interactive and feedback between tutors and learners. Empirical research suggests that tutorials have a positive impact on academic performance, as they foster a deeper grasp of the material, the acquisition of skills, and active learning (3,4). Nevertheless, the presence of tutorials does not necessarily determine the effectiveness of tutorials; contextual conditions of access to learning resources, peer collaboration, study environment, and institutional support also play a role in determining the effectiveness of tutorials. These aspects may either reinforce or erode the advantages that come with the participation in tutorials.

Availability of good study resources, conducive learning conditions, and institutional support are all vital ingredients of successful learning systems. Tinto (5) points out that the outcome of the academic performance depends on interaction between students and academic environment, and Shuja (2) underlines that institutional and environmental factors play a significant role in shaping the outcome of academic performance. Besides these, other issues like poor learning conditions, insufficient resources and institutional support may act as a hindrance in the ability of the students to enjoy full benefits of the tutorial programs. It is thus important to understand these contextual factors in the context of explaining variations in academic performance of graduates of Health Information Management programmes.

Although a lot of tutorial programs have been implemented in institutions of higher learning, there is very little empirical evidence regarding the effects of contextual factors and perceived challenges on academic performance among students of Health Information Management in Nigeria. This gap is especially crucial in the interpretation of whether such access to resources and institutional support play crucial roles in the academic success within this specialized field.

2. Statement of the Problem

Academic performance has been a significant issue in higher education, especially in developing countries like Nigeria, where the academic performance of students remains below the expected standards (1). Though the introduction of tutorial programs as academic support mechanisms to improve learning has been made, they have proved to be inconsistent in their effectiveness in students. Poor academic performance is still recorded in most instances of students taking part in tutorials, and this indicates that there are other factors beyond the exposure to tutorials, which could be influencing performance.

The first is that contextual and environmental influences on academic success, including access to study resources and institutional support may be an important determinant of academic success. Although tutorials are meant to enhance learning outcomes, they might be limited in their capacity to do so due to insufficient resources, substandard learning conditions and ineffective institutional support systems (5,2). Nonetheless, empirical studies that investigate the role of the access to resources and institutional support on the academic performance in graduates of the Health Information Management program in Nigeria are limited. Such a gap restricts the full comprehension of the contextual conditions that promote or hinder the effectivity of the tutorial programs, thus limiting the development of the evidence based interventions that would enhance or hinder the overall effectiveness of the tutorial programmes.

3. General Objective

In order to present contextual factors, challenges, and perceptions regarding tutorial participation and academic performance among the graduates of School of Health Information Management, OAUTHC, Ile-Ife.

Specific Objectives

1. To identify access to study resources, peer collaboration, study environment, and institutional support among the graduates of School of Health Information Management, OAUTHC, Ile-Ife.
2. To explain issues that militate against effective tutorial participation among the graduates of School of Health Information Management, OAUTHC, Ile-Ife.
3. To explain the perceptions of the graduates of School of Health Information Management, OAUTHC, Ile-Ife, concerning the contributions of the tutor to learning and performance among the graduates.

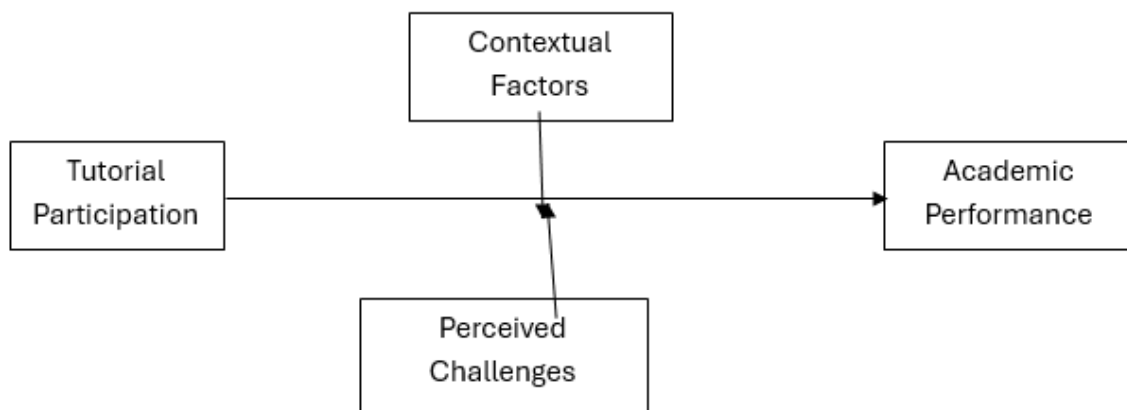
4. Hypothesis

H₀: There is no significant relationship between access to resources and institutional support and academic performance.

5. Conceptual Framework

In this research, a framework that explores the impact of contextual factors (independent variables) on academic performance (dependent variable) among the graduates of the School of Health Information Management, OAUTHC.

The framework recognizes the main contextual variables such as access to study resources, peer collaboration, study environment, and institutional support, which in combination influence academic outcomes of students. It assumes that learning effectiveness is facilitated by sufficient access to resources, supportive institutional structures, and hindered by poor learning environments and limited support systems (6,7). It is the contextual conditions that are thus conceptualized as direct predictors of academic performance.



Source: Field Data

6. Theoretical Framework (Constructivist Theory)

Constructivist theory, which has been developed by Vygotsky (8) and Piaget, puts emphasis on the fact that knowledge is actively constructed during the process of interaction and experience. According to Ahakiri (9), Steffe and Gale (10) and Fosnot (11) define learning as a dynamic process that is influenced by a reflection process and engagement with the environment. Jonassen (12) goes on to state that the process of learning is conditioned by the knowledge structures that exist and the conditions of the situation.

Contextual variables like access to resources, peer cooperation and institutional support are considered environmental variables that determine the success of constructivist learning. These variables determine the interaction between students and tutorials and how to build

knowledge. Difficulties related to such factors as limited resources or ineffective learning conditions might impede the process of effective knowledge construction, whereas the supportive context encourages understanding and academic achievement.

7. METHODS

To investigate the contextual factors, perceived challenges, and their impact on academic performance among graduates, a cross-sectional descriptive design was adopted.

The population of the study was 81 graduates who were enrolled in tutorial programs and had complete scholarly records and questionnaire responses. Complete enumeration sampling was used.

A structured questionnaire was used to collect data that included the contextual variables such as access to study resources, peer collaboration, study environment, and institutional support. Issues regarding tutorial attendance were also measured, such as schedule problems, lecturer inconsistency, insufficient coverage of topics, financial limitations and infrastructural constraints.

The measurement of responses was done based on Likert-scale rating and categorical frequency distributions. Data on academic performance were acquired through institutional records which included pre- and post-tutorial results. We have obtained ethical approval and informed consent before data collection and ensured strict confidentiality was maintained throughout the study.

Validity was determined by checking the instruments with experts, and reliability was assessed using Cronbach alpha (> 0.70). The SPSS version 30.0 was used to analyze the data with descriptive statistics and multiple regression analysis to determine the predictive effects of contextual factors on academic performance.

8. RESULTS

Table 1: Socio-Demographical Characteristics of the graduated students of SHIM, OAUTHC, Ile-Ife, Osun State

Variable	Frequency (n=81)	Percentage (%)	Statistic
Sex			Mean = 1.2346 SD = 0.4547 Chi-Square = 2.188 DF = 3 P = 0.534
Male	14	17.3	
Female	67	82.7	
Age Group			Mean = 1.8272 SD = 0.3805 Chi-Square = 4.907
18-25	63	77.8	
26-35	17	21.0	

36-45	1	1.2	DF = 6 P = 0.556
Level of Education			Mean = 1.7407 SD = 0.4410 Chi-Square = 11.915 DF = 3 P = 0.008
OND	21	25.9	
HND	60	74.1	
Employment Status			Mean = 1.1013 SD = 0.3036 Chi-Square = 1.354 DF = 3 P = 0.716
Unemployed	71	89.9	
Employed	8	10.1	

Sociodemographic status (mean score + SD) = 5.90+1.58

Source: The Researchers, 2026

Table 1 indicates that most of the respondents were female (82.7%), as opposed to male respondents (17.3%). Nonetheless, the difference in the sex distribution was not significant ($\chi^2 = 2.188$, $p = 0.534$). Age wise, the respondents were majorly found between the age of 18-25 years (77.8%), followed by those respondents who were aged 26-35 years (21.0%), and the only small percentage of respondents were those who were in the age bracket of 36-45 years (1.2%). The difference in the age distribution was not statistically significant ($\chi^2 = 4.907$, $p = 0.556$).

In terms of education level, the respondents had higher proportions of HND (74.1%); OND (25.9%). This was found to be statistically significant ($\chi^2 = 11.915$, $p = 0.008$) which implies that there should be significant difference between the educational attainment of respondents. Considering the employment status, most of the respondents were unemployed (89.9%), with a small proportion being employed (10.1%). Nevertheless, this was not a statistically significant difference ($\chi^2 = 1.354$, $p = 0.716$).

All in all, the results of the study indicate that, respondents were mainly young, female, HND holders, and mostly unemployed, although educational level is the only socio-demographic variable that manifests statistically significant difference. Besides, the overall score of the sociodemographic status was moderately high (mean = 5.90 ± 1.58) which means that the distribution of respondents across the measured socio-demographic characteristics was rather homogenous.

Table 2: To identify contextual factors influencing academic outcomes, such as: access to study resources, peer collaboration, study environment, institutional support.

Factors	Not at All F (%)	Slightly F (%)	Moderately F (%)	Greatly F (%)	Extremely F (%)
Study Resources e.g. CBT Made Easy textbook	2 (2.5)	4 (5.0)	23 (28.7)	32 (40.0)	19 (23.8)
Tutor Competence	0 (0)	5 (6.2)	18 (22.2)	40 (49.4)	18 (22.2)
Peer Collaboration	2 (2.5)	7 (8.6)	23 (28.4)	31 (38.3)	18 (22.2)
Personal Motivation	1 (1.2)	4 (4.9)	16 (19.8)	32 (39.5)	28 (34.6)
Study Environment	1 (1.2)	2 (2.5)	28 (34.6)	34 (42.0)	16 (19.8)

Source: The Researchers, 2026

The results of Table 2 reveal that there are various contextual variables that were perceived to have a very strong impact on academic results among graduates.

Access to study resources was reported to have significant effect with majority of the respondents reporting that it had significant impact on study outcomes (40.0%) or very high (23.8%). On the same note, instructor expertise has been found to be a significant aspect, with most respondents reporting that it had a considerable impact on academic performance (49.4%) and extremely (22.2%).

Peer collaboration was also identified to be influential as a significant proportion of respondents indicated that it had a significant impact on their academic performance (38.3%) or highly (22.2) significant. Personal motivation was also found to be one of the most significant factors, with most of the respondents reporting that it had a significant impact on their performance (39.5% as well as 34.6%).

Moreover, the environment in which the study was conducted was also reported to have a significant impact, with most respondents stating that it had a significant impact on their performance (42.0) or a very strong impact (19.8%), which highlights the role of a favourable environment in which the study was carried out.

Generally, the results indicate that a combination of resource availability, tutor competence, peer interaction, personal motivation, and learning environment influence academic outcomes, with most factors having a moderate to strong effect.

Table 3: To assess challenges militating against effective Tutorial Program.

	Frequency	Percentage (%)
Prolong Hours/Poor Adherence to Schedule	19	26.0
Absence/Lateness/Inconsistency of Lecturers	21	28.8
Failure to cover all topics/heavy reliance on note-writing	8	11.0
Poor classroom conditions/lack of access to computers for CBT	3	4.1
High Transport Cost hinders consistent attendance	7	9.6
Struggle with foundational knowledge/difficult understanding of complex concept/workload balancing	9	12.3
Economic Challenges of Nigeria	6	8.2

Source: The Researchers, 2026

Table 3 shows that the effectiveness of the tutorial programme was limited by a number of challenges, although these had different effects on different respondents.

Absence, lateness and non-adherence to schedule (28.8%), followed by excessive hours and poor schedule adherence (26.0%), and time management and instructor commitments were of primary concern. Other significant issues were the inability to grasp complex ideas and balance workload (12.3%), and failure to cover all issues and over-reliance on note-writing (11.0%), which indicated gaps in content presentation and understanding.

Moreover, cost of transportation (9.6%) and the broader economic factors (8.2%) were also found to be the obstacles to consistent participation, which showed the impact of external socioeconomic factors. Less common (4.1%), though still present, problems with infrastructures did not prove to be the most prevalent concern.

In general, the findings indicate that the challenges prevailing in the tutorial programme were more of an issue of consistency of instruction, scheduling and issues of learning with some implication of economic and logistical constraints.

Table 4: To document graduates' perceptions of tutorial contributions to learning and performance.

Importance of Tutorial Program	Frequency	Percentage (%)
Provide a deeper understanding of courses, clarified difficult topics, exposed students to new ideas and skills	17	20.5
Significantly boosted confidence, preparation for exam and CBT specific guidance	20	24.1
Motivate consistent study, improve reading capacity and a backup for independent study	12	14.5
Enhance problem-solving skills, critical thinking, practical abilities and CBT questions handling	10	12.0
Focused on areas frequently covered in exams, familiarize	12	14.5

students with exam pattern and enabled better time management	8	9.6
Provide access to essential resources and allowed interaction with dedicated lecturers	4	4.8
Promote active learning, group reading and personal attention for better retention		
Perceived Tutorial Impact		
Clarified difficult topics		
Disagreed	6	7.6
Neutral	8	10.0
Agreed	66	82.4
Improve Confidence Level		
Disagreed	2	2.6
Neutral	9	11.2
Agreed	69	86.2
Motivate Study Consistency		
Disagreed	4	5.0
Neutral	5	6.3
Agreed	71	88.7
Well Organized		
Disagreed	5	6.3
Neutral	12	15.0
Agreed	63	78.7

Source: The Researchers, 2026

The results in Table 4 reveal that graduates felt that the tutorial programme made significant contributions to their learning and academic performance.

According to the perceived importance, the respondents mentioned that tutorials mainly increased confidence and improved exam preparation (24.1%), as well as provided them with a deeper insight into course content (20.5%). Other significant contributions encompassed better consistency and reading ability, better problem-solving and critical thinking ability, and acquainting students with the patterns of examination.

Moreover, the perceived effects of the tutorial programme were significantly positive. A huge percentage of the respondents agreed that tutorials helped them to understand challenging subjects (82.4%), they felt the tutorials were useful in raising their confidence levels (86.2%), and that they were motivated to continue studying (88.7%). Moreover, the majority of respondents indicated that the tutorial sessions were well organized (78.7%), which means that they were satisfied with the structure and delivery of the programme.

Generally, the results indicate that the tutorial programme was a critical factor in improving the understanding, developing confidence, and instilling effective study behaviors, which made a positive contribution towards the academic success of the graduates.

9. Test of Hypotheses

H₀₁: Access to resources and institutional support do not significantly predict academic performance.

Table: 5							
Model		Unstandardized			Standardized		t
Sig.		Coefficients		Coefficients			
		B	Std. Error	Beta			
1	(Constant)	.347	.434	0.800	.427		
Study Resources e.g. CBT	-.125	.082	.188	1.514	.134		
Made Easy Textbook							
Tutor Competence		.075	.102		.098	.735	
.465							
Peer Collaboration		-.109	.086		-.171	-1.276	
.206							
Personal Motivation		.001	.096		.002	.015	
.988							
Study Environment		.146	.105		.193	1.396	
.167							
a. Dependent Variable: Performance Improvement							

a. Dependent Variable: Performance Improvement

R=0.257, R²=0.066, Adjusted R²= 0.003, F=1.045, P = 0.398

Source: The Researchers, 2026

Table 5 under multiple regression analysis was done to test if the variables of access to resources and institutional support are significant predictors of academic performance in graduates.

Overall model fit

The overall model was not statistically significant ($F = 1.045$, $p = 0.398$) which implies that the combination of predictors do not significantly explain the variation in academic performance. The model was only able to explain a very small portion of the variance ($R^2 = 0.066$; Adjusted $R^2 = 0.003$) indicating very weak explanatory power.

Individual predictors

The independent variables did not have significant utterances in predicting academic performance. Specifically, study resources ($B = -0.125$, $p = 0.134$), tutor competence ($B = 0.075$, $p = 0.465$), peer collaboration ($B = -0.109$, $p = 0.206$), personal motivation ($B = 0.001$, $p = 0.988$), and study environment ($B = 0.146$, $p = 0.167$) all showed non-significant relationships with academic performance, as their p-values exceeded the 0.05 threshold.

The relationships between variables were statistically significant, although some of them were positive such as study environment and tutor competence, others such as study resources and peer collaboration were negative.

All in all, the results show no significant relationship between the variables of access to resources and institutional support and academic performance among graduates of the School of Health Information Management, OAUTHC. Thus, the null hypothesis (H_{01}) is accepted.

Pre–Post Comparison (Paired Test)

H₀₂: There is no significant difference between pre-tutorial and post-tutorial academic performance.

Table 6: Paired Samples Statistics (Pre vs Post Academic Performance.)

Variable	Mean	N	Std. Deviation	Std. Error Mean
PREAVG	2.2975	67	0.9064	0.1107
POSTAVG	4.0154	67	0.6433	0.0786

Table 7: Paired Samples t-Test.

Comparison	Mean Difference	t	Df	p-value	95% CI (Lower, Upper)
PREAVG – POSTAVG	-1.7179	-16.666	66	.000	[-1.9237, -1.5121]

Table 8: Effect Size.

Effect Size Type	Value	95% CI (Lower, Upper)
Cohen's d	-2.036	[-2.455, -1.612]
Hedges' g	-2.024	[-2.441, -1.603]

Source: The Researchers, 2026

Paired samples t-test was used to compare the academic performance of before and after tutorial sessions were conducted.

Descriptive statistics

The results in Table 6 show that academic performance has significantly improved after the tutorials, as the mean score is now 4.0154 (SD = 0.6433) as compared to 2.2975 (SD = 0.9064) before the tutorials.

Paired samples t-test

The statistical significance of the difference between the pre- and post-tutorial performance in Table 7 was found to be statistically significant ($t(66) = -16.666$, $p < 0.001$). The difference of

-1.7179 (95% CI: -1.9237 to -1.5121) shows that the post-tutorial scores were significantly higher than pre-tutorial scores.

Effect size

The size of this difference, as indicated in Table 8, was very large, as indicated by Cohen $d = -2.036$ and Hedges $g = -2.024$, with both Cohen and Hedges showing values less than zero. This implies that, the increase in academic performance after participating in tutorials is not only statistically significant but also substantial.

Generally, the results give great indications that participation in tutorials greatly enhances academic performance among graduates. Thus, the null hypothesis (H_{02}) is rejected.

10. Qualitative Reports

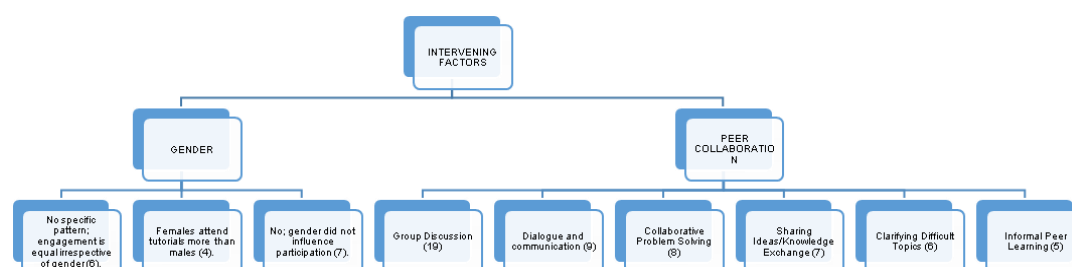


Fig. 2: Gender Influence on Tutorial Participation and Performance & Peer Collaboration and Learning Interaction.

10.1 Overview of Findings

The qualitative data analysis using seven focus group discussions showed two significant intervening factors with regard to the outcomes of learning in tutorial participation: gender and peer collaboration. These aspects were analyzed with the aim of comprehending the effect of social interactions and demographic factors on academic engagement and academic performance.

Two general ideas were revealed:

1. Gender Impact on Tutorial attendance and achievement.
2. Peer Collaboration and Learning Interaction.

4.2 Theme 1: Gender Impact on Tutorial Attendances and Results.

Narrative Findings

Results of all seven transcripts are consistently found to indicate that gender was not viewed as a factor of participation or performance in academic activities.

The vast majority of participants made their intentions clear that gender has no impact on the learning outcomes. One of the participants noted that “there is no apparent trend between male and female participation or performance, whereas several others repeated the statement that there is no noticeable pattern between male and female participation or performance”.

Nevertheless, there was a minority opinion that females can attend tutorials at a higher rate than males. A respondent revealed that females are more likely to attend tutorials than males, but this was not associated with any difference in performance.

On the whole, gender has been generally perceived as having no impact in the determination of academic success with the difference in participation more due to personal commitment than gender identity.

Theme 2: 4.3 Peer Collaboration and Learning Interaction.

Peer collaboration turned out to be a powerful social learning process that affects the comprehension, problem-solving, and academic self-confidence.

10.2 Narrative Findings

The peer cooperation was always reported as one of the main characteristics of tutorial learning. The students (in all groups) stressed the significance of group-based learning strategies.

Group discussion was the most predominant type of interaction; in this type of interaction participants collaborated and worked together in order to solve academic problems. One of the participants mentioned that “group discussion helped clear up doubts and develop understanding based on the mistakes of the other participants”.

Allied closely was the dialogue and communication that enabled students to share ideas free of charge. One participant mentioned that they would mingle and talk about challenging issues together, and how informal and yet effective peer learning could be.

Another theme of interest was joint problem solving and using previous questions and in particular CBT-based materials. One respondent said that, “answering past questions with fellow students would help in understanding the structure of the exams”.

Another aspect that was emphasized by the participants is that peer collaboration allowed them to spot their weaknesses and gain academic confidence. One of the participants

indicated that “due to teamwork, we were able to establish the strengths and weaknesses during revision sessions”.

Generally, peer collaboration was a form of reinforcement that enhanced knowledge and increased academic readiness.

11. DISCUSSION

These results of the study suggest that contextual factors and perceived challenges are important predictors of the learning experience of graduates; but are not significant predictors of the academic performance of graduates within the statistical model. The quantitative findings indicate that the perception of access to the study resources, tutor competence, peer collaboration, personal motivation, and the study environment were all perceived to have moderate to a great impact on academic outcomes. Although these positive perceptions were present, the results of the multiple regression analysis did not indicate significant predictive value of any of these variables in academic performance, and the overall model was not statistically significant ($R^2 = 0.066$, $p = 0.398$). This indicates that although contextual factors as identified by the students are considered to have a significant effect on academic performance, the direct measurable effect on academic performance is not as high in the study context as the contextual factors have been identified to have a significant effect on academic performance. The given finding is consistent with Shuja (2), who argued that academic success is heavily influenced by the environmental conditions, but points in opposite directions to Tinto (5), who believed that the conditions in the environment could greatly affect academic success.

Descriptive results illuminate the perceived relevance of contextual variables to support learning. The use of learning resources, specifically CBT-oriented ones, was universally reported as having a significant impact on academic performance, which supported the role of learning materials in helping to understand and prepare to study. Equally, competence of tutors was also listed among the key factors and the respondents highlighted the importance of having information-sharing instructors. Peer cooperation and study atmosphere were also seen to play a significant role in educational achievement, as it indicates the significance of social interaction and favorable learning conditions. Personal motivation was found to be among the most powerful factors, indicating that personal motivation continues to be the key to academic success. These findings are in accordance with constructivist learning theory which focuses on the role of interaction, environment and inner drive in building knowledge (8,11,9).

Although these are strong perceptions, the fact that the predictive effects are not statistically significant is indicative of the fact that the contextual effects may be operating in an indirect manner or they may interact with other variables that have not been fully captured in the regression model. The very low adjusted R^2 (0.003) indicates that the included variables explain only a very small percentage of the variance in academic performance, and supports the notion that academic success is affected by a wider range of cognitive, behavioural, and institutional factors. This result is also in line with previous findings in the same study where, behavioural and moderating variables also revealed limited direct effects on the performance, indicating a possible repetitive pattern of weak statistical correlations despite strong experiential relevance.

The perceived challenge analysis will also give more understanding of the aspect that can be a hindrance to the effectiveness of the tutorial programmes. The top issues which were noted were lecturer inconsistency, lateness and inadequate schedule adherence as well as protracted tutorial hours. These observations show that the problems of organizations and time management are important obstacles to successful learning. Other problems like inability to comprehend complex ideas, inability to cover all the topics, and the use of note-writing and similar methods illustrate possible gaps in instructions delivery. The presence of socioeconomic constraints, such as high transportation costs and larger economic problems, also contributes to the importance of considering the effect of external factors on the ability of students to consistently attend tutorials. These results are consistent with the earlier investigations that highlighted the influence of the institutional and environmental barriers on the outcomes of learning (1), especially in the environment that is resource-constrained.

Despite these difficulties, pre post analysis offers good evidence that the tutorial programmes are effective in improving academic performance. The high effect size (Cohen $d = -2.036$) and the significant difference between post-tutorial scores and baseline scores indicates that the effect of tutorial attendance on academic performance is large and significant. This finding is especially significant, in the sense that, although contextual factors do not alone predict performance, the overall tutorial intervention is nonetheless highly effective. This attests to the existing literature on the importance of structured academic support to improve learning outcomes (3,4).

Qualitative results add more color to the explanation of these results. The peer collaboration was found as a prevailing influence on learning, with participants continually pointing to the role of group discussions, collective problem-solving, and interactive learning in enhancing understanding and level of exam preparation. The collaborative strategies employed in

solving past questions as well as engaging in group revision sessions reflect some of the core values of constructivist learning where knowledge is co-constructed through social interaction (12,9). Such results indicate that peer interaction is a significant mechanism by which tutorials can positively influence learning outcomes, although it may not have a significant statistical effect.

Conversely, gender was not viewed as an important factor that affects academic participation or performance. The majority of respondents did not see any apparent difference in the performance or behaviour of male and female students, suggesting that academic performance is more closely related to personal commitment and learning behaviours than it is to demographic factors. This observation affirms the idea that educational interventions like tutorials can offer fair learning opportunities to the various demographic groups.

On the whole, the results indicate that although the learning environment and the experiences that students go through are shaped by the contextual factors and perceived challenges, the latter do not significantly predict the academic performance in a statistically significant way. The high positive change in pre- and post-academic outcomes is the evidence of the efficacy of tutorial programmes but the impact of the programmes is probably mediated by the complex and interrelated mechanisms of behavioural, instructional, and environmental influence. The gap between perceived and statistical significance implies the necessity of more thorough analytical models that can represent the interactions.

These findings emphasize the need to take a comprehensive approach to academic support, one that does not only focus on making sure that resources and institutional support are available but also on issues of instruction quality, student engagement, and structural issues. The reinforcement of tutorial programmes thus involves not just the enhancement of contextual conditions but also the enhancement of the interaction of these factors in such a way that positive learning experiences translate into academic success that can be measured.

12. Theoretical Application

The results of this study can be related to constructivist theory which suggests that learning is an active process of constructing meaning through interaction and experience as proposed by Lev Vygotsky (8) and Jean Piaget. The perceived significant influence of contextual factors including study resources, collaborating with peers, competence of tutor, and learning environment is indicative of the importance of supportive conditions in facilitating knowledge construction as the views of Catherine Fosnot (11) and Leslie Steffe and Jerry Gale (10) who assert that learning is shaped through interaction with the environment. The

fact that the academic performance of tutor participants improved significantly, which again, suggests that the interactive learning environment benefits understanding through the interactive learning process. Nevertheless, the non-significant predictive impact of contextual variables on the regression analysis indicates that though these variables create enabling conditions, they may not necessarily determine the outcomes, and that is where internal cognitive structures come in as observed by David Jonassen (12). Also, qualitative results about peer collaboration support the role of social interaction in knowledge construction whilst the issues of poor scheduling and insufficient resources can be seen as examples of how the constraints of the learning environment can hinder effective engagement and limit the full expression of constructivist learning processes.

13. CONCLUSION

The study concludes that although contextual factors like access to study resources, tutor competence, peer collaboration, personal motivation, and study environment are perceived to have a significant influence in learning, they do not significantly predict academic performance among graduates statistically. Nevertheless, the significant and considerable positive change in academic performance was observed through the participation in tutorials, which means that tutorials still can be regarded as an effective academic intervention. The results indicate that contextual variables are more enabling conditions, which shape academic experiences than direct determinants of academic performance, which underscores the complexity and multidimensional nature of academic achievement.

14. RECOMMENDATIONS

1. Institutional Management (School Authorities): Should enhance the efficiency of the organization in terms of efficiency in tutorial programmes by ensuring that there is strict adherence to schedules, and that there is strict adherence to schedules and monitoring lecturer punctuality and consistency.
2. Government and Educational Stakeholders: Should ensure that they have sufficient learning materials and facilities, access to CBT facilities, up to date textbooks and favorable learning environments.
3. Tutors/Lecturers: Should improve methods of instruction delivery by simplifying the complex concepts, covering all the topics, and adopting the interactive and problem based methods of instruction delivery.

4. Students: Are expected to actively participate in peer collaboration and group learning, using a problem solving and discussion as the key elements to enhance understanding and academic confidence.
5. Policy Makers and Academic Planners: Are advised to address socioeconomic issue by establishing support systems like subsidies on transportation or flexible work schedules to enhance regular attendance of tutorials.

15. Limitations of the Study

The research is constrained by cross-sectional design which limits causal interpretation of relationships between variables. The small and homogeneous size of the sample might have decreased variability and limited extrapolation of results. Moreover, the use of self reported data on contextual factors and challenges could result into bias regarding response. The other possible predictors like cognitive ability or previous academic background could have been included in the study as they may have stronger predictive powers on academic performance.

Other Information

Ethics Approval and Participant Consent

Ethical approval for this study was obtained from the appropriate institutional review authority of Obafemi Awolowo University Teaching Hospitals Complex prior to data collection. Informed consent was obtained from all participating students, ensuring voluntary participation. Strict measures were implemented to maintain confidentiality and anonymity of all respondents, and all procedures were conducted in accordance with established ethical standards for research involving human participants.

Conflict of Interest Statement

Disclosure of conflict of interest: The authors declare that there are no conflicts of interest or competing interests associated with this study.

ACKNOWLEDGEMENT

The authors sincerely acknowledge the Research and Project Committee of the School of Health Information Management, Obafemi Awolowo University Teaching Hospitals Complex, for their constructive feedback and valuable contributions. Appreciation is also extended to the academic staff of the School, particularly Mr. Adesoji Adeniregun, Mr. Lamidi Semiu, Mrs Fawole Oluwayemisi and Mr. Akilo Gbenga, for their guidance and support. The authors further thank the 2024/2025 final year students and all participants

across the selected Local Government Areas in Osun State for their time and cooperation in this study.

Author Contribution Statements

OSA conceived the study, initiated the study design, participated in data analysis and coordination, and drafted the manuscript. AF contributed to the study design and coordination and critically reviewed the manuscript for intellectual content. ABK also contributed to the study design and coordination and reviewed the manuscript. ACO participated in the study design and coordination and was actively involved in data collection and data analysis. All authors read and approved the final manuscript and agree to be accountable for all aspects of the work in line with the recommendations of the International Committee of Medical Journal Editors.

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