
Managing Education in Peculiar Situations: A Case Study of Students' Responses to Active-Learning and Peer-Tutoring Strategies in HIV/AIDS Classroom in Ekiti State, Nigeria

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Abstract

The Global Educational system has encountered significant problems due to the persistent occurrence of pandemics from time to time. This pandemic ranges from Covid-19, HIV/AIDS, Ebola and the like. This study investigated managing education in a peculiar situation concerning students' responses to active learning and peer-tutoring strategies in HIV/AIDS classrooms in Ekiti State, Nigeria. The study also examined the moderating effects of gender and self-efficacy on active learning and peer-tutoring on students' achievement in HIV/AIDS classrooms. A pre-test, post-test, control quasi-experimental design with a 3x2x2 factorial matrix was adopted for the study. The sample consisted of one hundred and fifty (150) students drawn from three randomly selected government secondary schools in Ekiti State. Each class was randomly allocated to one of the treatment conditions (active-learning, peer-tutoring, and conventional method). The experiment used Four contact sessions of 40 minutes per lesson in each of the three schools, which lasted for six weeks. In collecting data, Two measuring instruments, the Achievement towards HIV/AIDS Questionnaire (ATHAEQ) and Self-Efficacy in HIV/AIDS Education Questionnaire (SEHAEQ), were used. Findings from the study revealed significant effects of active learning, peer-tutoring and self-efficacy on students' achievement in HIV/AIDS classrooms. Therefore, the government recommended encouraging teachers to use active learning and peer-tutoring in the classroom. The study also advised the government to create an environment where students can study as groups, giving room for active participation in the school.

Keywords: Education, HIV/AIDS, Active-learning, Peer-tutoring, Ekiti State, Nigeria

Introduction

The current global concern about pandemics has posed many challenges to schools and other social institutions. Among these pandemics are Covid-19, Human Immunodeficiency Virus (HIV) and the like. Schools were closed down while other economic activities were grounded to a halt. It is widely believed that effective educational strategies could help prevent the spreading and managing of HIV/AIDS without a potent vaccine.

HIV/AIDS education as part of health education is vital for young people as it provides students with opportunities to learn how they can prevent the onward transmission of HIV and contribute to a caring and vibrant society for people affected by the virus. United Nations Educational Scientific and Cultural Organization (UNESCO, 2018) posited that consistent findings should intensify efforts to deepen knowledge and promote a positive attitude about preventing and controlling HIV/AIDS. Adeyemo (2015) cited HIV/AIDS as a pandemic that needed quick interventions because of the harmful effects on schools and other institutions. United Nations Educational Scientific and Cultural Organization (UNESCO, 2018) also stressed a need to facilitate the rapid exchange of knowledge and perspective to stimulate discussions on HIV/AIDS. John (2012) revealed that schools are the critical settings for educating young people about HIV/AIDS, for further spreading HIV infection and for reducing stigma. Femi and Anthony (2020) state that managing education during peculiar situations removes fears among children. Abigail (2012) stressed that opportunities to create a supportive educational environment for students and teachers are best delivered in the classroom settings.

Avert (2016) posited that given the vast numbers of deaths that might still prevent, the importance of adequate education and the strategies to be used in imparting knowledge and the students' inputs are equally crucial.

Cameron (2010) viewed an active learning strategy as a student-centred approach to teaching, which involves the students being responsible for their learning. Alhassan (2011) cited that active learning encourages students to be actively engaged and promotes problem-solving, critical thinking and manipulating materials.

Peer tutoring is an instructional strategy that consists of students' interaction during learning. Ajuba (2011) defined peer-tutoring strategy as a flexibly, peer-mediated strategy that involves students serving as academic tutors and tutees.

Peer-tutoring involves many tutoring models that connect brilliant students with lower-achieving students for structured learning. It also promotes academic gains as well as social enhancement. UNAIDS (2015) argued that the epidemic of HIV/AIDS should be fought from all fronts, especially in the school setting. National Education and Research Development Council (NERDC, 2011) stressed that drastic measures be taken to fight against sexual abuse and HIV/AIDS in society.

Statement of the problem

The problem of HIV/AIDS as one of the pandemics ravaging society is well established as a significant societal challenge. HIV/AIDS is a public health challenge that has destroyed some components of the social institutions. For example, some students abandoned their education due to caring for relations affected with HIV. Poverty, lack of adequate medical facilities, and inadequate education are a few factors that facilitate the spread of the disease, which have undermined the economic and social development of many developing nations of the world. Many previous studies on HIV/AIDS prevention and control have been mainly descriptive surveys that dealt more with investigating the prevalence or manifestation of the problems rather than innovative methods of improving achievement.

With increasing reports of the pandemic in society, there is a need to shift to strategies for promoting the core messages of these learning areas, particularly within the senior Secondary Schools. The study, therefore, determined the efficacy of two innovative approaches, namely,

active learning and peer-tutoring, as against the conventional method in enhancing achievement in HIV/AIDS e

Research Hypotheses

Three hypotheses raised in the study are:

1. There is no significant effect of instructional strategy on students' achievement in HIV/AIDS Education.
2. There is no significant effect of gender on students' achievement in HIV/AIDS Education.
3. There is no significant main effect of Self-Efficacy on students' achievement in HIV/AIDS Education.

Methodology

The study used a pre-test, post-test quasi-experimental design with a 3x2x2 factorial matrix. The sample comprised one hundred and fifty (150) Civic Education students from three public senior secondary schools selected through a multi-stage sampling technique. In the first stage, the study randomly assigned a Local Government from the three Senatorial Districts in Ekiti State.

In the second stage, the study randomly selected one public secondary school from each designated Local Government area to make up three schools. Finally, the study randomly selected three public schools to ensure that each school was (1) registered for the West African Examination Council (WAEC) and National Examination Council (NECO), a centre conducting Senior Secondary Certificate Examination (SSCE) in the subject. The study also used a balloting system to assign the three selected schools that satisfied the above conditions and randomly selected Only one arm of the Civic Education class in each school.

A total of one hundred and fifty (150) Civic Education students participated in the study. Coincidentally, 50 Civic Education students were found in each selected class. The sample consisted of 63 males and 83 females.

The study used Two instruments to collect data, namely (i) the HIV/AIDS Education Achievement Test (HAEAT) and HIV/AIDS Self-Efficacy Achievement Test (HAESAT). It consisted of a thirty (30) item-test each. An expert ensured the validity of the instruments in test and measurement in my university, and two senior lecturers in Social Studies Education perused the content of the test and incorporated their comments and suggestions into the final version.

The instrument was also administered in a secondary school not involved in the main study. The study used the test-retest method; the test was issued to 30 students twice at two weeks intervals. The test scores were correlated, and the result obtained gave a reliability coefficient of 0.82, indicating that the instrument was highly reliable.

Results and Discussion.

The study tested the three hypotheses to ascertain the significant difference in students' responses to active learning and peer-tutoring strategies in HIV/AIDS classrooms and the moderating roles of gender and self-efficacy on students' achievement in HIV/AIDS Education

Hypothesis 1

There is no significant effect of instructional strategies on students' achievement in HIV/AIDS education.

Table 1: Summary of Analysis of Covariance of students' Achievement of HIV/AIDS Education according to Instructional Strategy, Gender and Self-efficacy Levels.

Source of Variation	Sum of Squares	Dif	Mean Square	F	Sig of F
Main Effect	3852.555	1	3852.555	76.917	.000
Covariates (pre-test)	118.399	1	118.399	2.364	.126
Learning Strategy	226.760	2	113.380	2.264	.108
Gender	61.594	1	61.594	1.230	.269
Self-efficacy	13.390	1	13.390	267	.606
Two-way interaction					
Treatment *Gender	18.110	2	9.055	181	.835
Treatment *Self-efficacy	26.560	2	13.280	265	.767
Gender *Self Efficacy	107.895	1	107.895	2.154	.144
Three-way Interaction					
Treatment *Gender *Self-efficacy	12.961	2	6.480	129	.879
Explained	629.272	12	52.439	1.047	.410
Residual	6861.901	127	50.087		
Corrected Total	7491.173	149			

R squared = .084 (Adjusted R square=.004)

Table : Multiple Classification Analysis of Students' Achievement of HIV/AIDS Education According to Instructional Strategy, Gender and Self-efficacy Levels.
(Grand = 29.546)

Variable + Category	N	Unadjusted Deviation	Eta	Adjustment for Independent+ Covariates	Beta
Instructional Strategy					
1. Active Learning (ALS)	50	-1.833		-1.773	
2. Peer-Tutoring (PTS)	50	1.722		1.595	
3. Conventional Method	50	0.107	.206	0.178	.195
Gender					
1. Male	67	0.845		0.649	
2. Female	83	-0.682	.107	-0.524	.083
Self-Efficacy					
1. Low	77	-0.103		0.078	
2. High	73	-0.108	.015	-0.083	.011
Multiple R Squared					.049
Multiple R					.221

Table 1 presents the summary of the covariance (ANCOVA) test analysis on the effect of learning strategy, gender and self-efficacy on the students' HIV/AIDS education achievement. The result shows the outcomes of the direct and interaction effects of the three levels of instructional strategy (active learning peer-Tutoring and conventional (control) used in the study, as well as two levels of gender (male and female) and two levels of self-efficacy (low and high) on the students'

achievement of HIV/AIDS classroom. In addition, the result shows a non-significant main effect of instructional strategy ($F_{(2,137)} = 2.264, P > 0.05$). The result implies that there is no significant difference in the mean post-test achievement scores of the students after exposure to the two strategies. As a result, hypothesis 1 is retained.

However, the multiple classification analysis (MCA) aspect of the ANCOVA test shows the magnitudes of the mean post-test achievement scores of the participants in the three levels of instructional strategy.

The MCA presented in Table 2 shows the mean post-test achievement scores of the participants under the instructional strategies, gender and self-efficacy according to the order of magnitudes as well as the contributions of the independent variables to the variance in the dependent variable (achievement of HIV/AIDS Education).

Hypothesis 2

There is no significant main effect of treatment of gender on students' achievement in HIV/AIDS classrooms.

The result of the main effect of gender in Table 1 shows a non-significant main effect of gender on students' achievement in HIV/AIDS classroom ($F_{(1,137)} = 1.230, P > 0.05$). This outcome implies no significant difference between the scores obtained by the male and female participants in the achievement of HIV/AIDS Education. As a result, hypothesis 2 is retained.

However, the result of the multiple classification analysis (MCA) on gender in Table 2 shows that, with a grand mean of 29.536, the male students with adjusted mean post-test achievement score of 30.195 (i.e. $29.546 + 0.649$) recorded a higher mean knowledge score than the female students with adjusted mean post-test achievement score of 29.022 (i.e. $29.546 - 0.524$). This outcome shows that the male recorded higher and better achievement scores than the female students. Still, the difference in the mean post-test achievement scores of the male and female participants is not statistically significant. The result in Table 2 further shows that gender as a variable contributed 8.3% of the variance in the students' achievement of sexuality and HIV/AIDS Education.

Hypothesis 3

There is no significant main effect of Self-efficacy on students' achievement in HIV/AIDS classrooms.

The main effect of Self-efficacy in Table 1 shows a non-significant impact of self-efficacy on the students' achievement of HIV/AIDS. ($F_{(1,137)} = 0.267, P > 0.05$). This outcome implies no significant difference between the scores obtained by the participants with low and high self-efficacy in achieving HIV/AIDS education. The hypothesis is retained.

However, the result of the multiple classification analysis (MCA) on self-efficacy in table 2 shows that with a grand mean of 29.546, the students having low self-efficacy with an adjusted mean post-test achievement score of 29.624 (i.e. $29.546 + 0.078$) recorded higher mean achievement score than the students have high self-efficacy who recorded adjusted mean post-test achievement score of 29.463 (i.e. $29.546 - 0.083$). This outcome shows that the students with low self-efficacy recorded higher achievement scores than those with high self-efficacy. Still, the difference in the mean post-test achievement scores of the low and high self-efficacy participants is not statistically significant. The result in Table 2 further shows that self-efficacy as a variable contributed 1.1% of the variance in the students' HIV/AIDS education achievement.

As evident in the funding of this study, managing education in a particular situation in Nigeria has proven to be a big challenge for teachers and students, especially during a pandemic. The non-significant results obtained from the study are a pointer to the fact that managing education at a peculiar time requires a type of learning that is not physical but virtually oriented. The question that comes to mind is the readiness of students and teachers in education due to

environmental factors and the financial status of both parents and students. Femi and Anthony (2020) posited that it is essential for teachers to have the necessary technical and pedagogical skills to collaborate in learning.

Similarly, the study has revealed no significant difference in the responses of both male and female students to managing education in a peculiar situation using active learning and peer-tutoring in HIV/AIDS classrooms. The study also revealed that the self-efficiency of students, whether low or high, has no significant main effect on managing education using active learning and peer-tutoring in HIV/AIDS classrooms.

Conclusion and Recommendations

Managing education in peculiar situations has many challenges for teachers and students. For example, it is evident from the study findings that teachers and students are adversely affected during a pandemic. Therefore the government has a role in finding solutions to environmental problems that may constitute a barrier to learning.

The government should invest more in education and provide the necessary instructional materials to enhance learning. In addition, the current efforts by the government to raise awareness and consciousness about the prevention and control of HIV/AIDS should be sustained and improved upon to complement the actions of other social institutions.

The student should be helped through counselling to overcome any problem that may arise from students' background, which may hinder their academic activities.

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