

Comparative Analysis of Collaboration and Lecture Methods in Promoting Psychological Literacy Among Undergraduate Students

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Abstract

This study is a comparative analysis of collaboration and lecture methods in promoting achievement in psychology among undergraduate students. The study adopted a Quasi-experimental research design. The study was guided by two research questions, and two hypotheses were formulated. The study was conducted in the Obio/Akpor Local Government Area of Rivers State in Nigeria. The population for the study comprised 400 undergraduate students from the Faculty of Education of the University of Port Harcourt, Rivers State. The simple sampling technique was used to obtain 90 students from two intact classes. The experimental groups were taught using the collaboration method, while the control groups were taught using the lecture method. The instrument for data collection was a 20-item multiple-choice test titled the Psychology Achievement Test (PAT), and the Kuder-Richardson (K-R 20) was used to obtain a reliability index of 0.87. The research questions were analyzed using means and standard deviations, while the null hypotheses were tested using Analysis of Covariance (ANCOVA) at a 0.05 level of significance. The findings show that the collaboration method promotes a deeper understanding and use of psychological models than the traditional method. It is recommended that teachers should regularly evaluate the effectiveness of their teaching methods through student feedback, assessment data, and observations and use evidence-based practices to modify teaching strategies and adapt them to the changing needs of college students and their personalities.

Keywords: Collaboration and lecture methods, Achievement in psychology, and Undergraduate students

1. Introduction

A psychology degree equips graduates with valuable skills like critical thinking, communication, and empathy, enhancing their understanding of human behavior and interpersonal dynamics, leading to career opportunities in diverse fields. Psychology helps in enhancing the skills and knowledge of graduates in diverse areas, which include but are not limited to understanding human behavior, improved communication, critical thinking, problem-solving, emotional intelligence, empathy and compassion, and enhanced employability.

Psychology provides insights into motivations, thought processes, and social influences, fostering a deeper understanding of oneself and others. Studying psychology can enhance communication skills, including active listening, empathy, and conflict resolution, which are valuable in various professional settings. Psychology courses often involve research, data analysis, and problem-solving, which cultivate critical thinking skills applicable to diverse careers. Psychology helps individuals develop emotional intelligence, enabling them to better understand and manage their own emotions, as well as those of others. The study of psychology fosters empathy and compassion, making graduates better equipped to connect with and help others. (Department of Psychology, University of Toronto, 2025).

According to Cranney & Dunn (2011), psychology graduates develop a deeper understanding of themselves and others. In addition to formal education, they can also gain a variety of skills and abilities that can be used in any job involving people. Knowledge of psychology is,

therefore, an essential component of graduate studies, and it is also a component of global citizenship. The importance of psychology, as stated above, calls for the achievement in psychology of graduates.

Achievement in psychology is the ethical application of psychological skills and knowledge. This could benefit individuals in their personal, occupational, and civic lives and subsequently benefit society. Achievement in psychology is “the general capacity to adaptively and intentionally apply psychology to meet personal, professional and societal needs. To promote Achievement in psychology, teachers need to use effective instructional strategies that will help students achieve this task. This study, therefore, is a Comparative Analysis of Collaboration and Lecture Methods in Promoting Psychology Literacy among Undergraduate Students.

1.1 Comparative Analysis of Teaching Methods

Education has undergone a significant transformation over the past few decades, with pedagogical strategies evolving to meet the changing needs of students and society. Traditional teaching methods, which have dominated classrooms for centuries, are increasingly being supplemented or replaced by modern teaching techniques (Mansour, F., 2024). There are several studies on the comparative analysis of teaching strategies, but research on achievement in psychology among students is limited.

The study by Beigzadeh, Bazayr, Delzendeh, Razmi, and Sharifi (2024) evaluates the effectiveness of the lecture method in comparison to the cooperative learning method on students' learning outcomes, communication skills, and

attitudes. This quasi-experimental method was adopted for the study. Findings showed a statistically significant improvement in the mean learning score of the cooperative group after the intervention, compared to the score before the intervention ($p = 0.007$). Moreover, the communication skills and attitude scores of students in both the cooperative and lecture groups showed a statistically significant increase after the intervention, as compared to their pre-intervention scores ($p < 0.05$). Additionally, following the intervention, the mean scores for communication skills and attitudes were significantly higher in the cooperative group compared to the lecture group, with statistical significance indicated by $p < 0.001$ and $p = 0.03$, respectively. The study highlights the effectiveness of cooperative teaching over traditional lecture methods in enhancing students' learning outcomes, communication skills, and attitudes. The findings indicate that cooperative learning encourages greater engagement, collaboration, and significant interaction among students, ultimately leading to improved academic performance and student satisfaction within the educational framework examined.

Farzad & Forouzan (2015) investigate a comparison between the effect of the cooperative learning teaching method and lecture teaching method on students' learning and satisfaction level. Using the semi-experimental method, the results showed that the cooperative learning teaching method has a greater effect on students' learning than the lecture teaching method. In the same vein, the results showed that the cooperative learning method results in higher satisfaction in students than the lecture teaching method.

This study by Terenzini, Cabrera, Colbeck and Parente (2001) examined the extent to which undergraduate engineering courses taught using active and collaborative learning methods differ from traditional lecture and discussion courses in their ability to promote the development of students' engineering design, problem-solving, communication, and group participation skills. The results of the study revealed that active or collaborative methods produce both statistically significant and substantially greater gains in student learning than those associated with more traditional instructional methods. The finding of the study provides empirical support for beliefs about the greater effectiveness of active and collaborative learning compared with more traditional approaches in developing students' engineering skills.

Awoniyi and Kamanga (2014) carried out a research study comparing the effectiveness of the cooperative learning strategy and the traditional instructional method on pupils' academic achievement and their motivation to learn in the physics classroom at Chibote Girls Secondary School in the Kitwe District of Zambia. The research was a pre-test/post-test control group design. The study revealed that the cooperative learning strategy class (Experimental group) outperformed the Traditional instructional method class (control group) in the physics test, and the difference in their academic achievement was found to be significant before and after controlling for pre-test. However, the performance for both groups was generally below average. In the same vein, the mean scores on pupils' motivational levels to learn revealed that the experimental group was highly motivated, whereas the control group was only

motivated, and their motivational levels to learn were significantly different before and after controlling for the pre-motivational survey. This study concludes that the Cooperative learning strategy is more effective than the traditional instructional method.

Mansour (2024) explores the evolving landscape of education by comparing traditional and modern teaching methods, which are teacher-centered instruction and student-centered learning, technology integration, and active participation, respectively. The researcher analyses the strengths and weaknesses of both paradigms to identify the most effective strategies for enhancing student engagement and achievement. The study concludes that a hybrid approach, incorporating the best elements of both traditional and modern methodologies, may offer the most comprehensive benefits for diverse learning environments.

Wang (2022) compares the advantages and disadvantages of modern education and traditional education methods by integrating the literature. The result shows that from a macro perspective, the advantages of modern educational methods are greater, but teachers should evaluate and choose which teaching method to use according to the student's situation, teaching purpose, and potential obstacles.

López-Belmonte, Segura-Robles, Moreno-Guerrero, and Parra-González, (2022) compared a Science, Technology, Engineering, and Mathematics (STEM) -based learning process and traditional teaching. The results show that the STEM approach was significant in all the dimensions of study and, according to teachers, was more influential for student motivation and grades. The results also show that the STEM teaching approach was significant in all the dimensions of the study. These dimensions are motivation, teacher-student, student-content, and student-student interactions; autonomy; collaboration; depth of content; resolution of problems; class time, student ratings; and teacher ratings. According to teachers, the strongest influence was on the students' motivation and qualifications. The researchers concluded that due to the advantages that STEM has demonstrated in education, comparative studies with other active methodologies, such as gamification and flipped learning, could be considered in order to measure the influence that each of them has on education. This study is a comparative analysis of collaboration and lecture methods in promoting achievement in psychology among undergraduate students.

1.2 Statement of the problem

Today, lectures often lead to passive learning where students are recipients of information rather than participants. This will limit their cooperation and positive thinking. Reduced coordination can lead to decreased retention and understanding of psychological concepts. The lecture method structures often provide little or no time for the interaction between teachers, students, or fellow students that is necessary for psychological knowledge. Lectures are often designed for mass presentation, which may not accommodate the diverse learning styles and needs of all students who do not learn well through listening and writing and will have difficulty reaching the same level of understanding as their peers. In addition, inadequate instruction can lead to ineffective collaboration and failure

to achieve academic goals. This, therefore, calls for a comparison of different teaching and learning strategies.

1.3 Research Questions

The following research questions guided the study:

1. What are the effects of collaboration methods compared to traditional lecture-based methods in promoting achievement in psychology among undergraduate students?
2. What are the comparative mean achievement scores of males and females using collaboration methods and lecture methods of learning in promoting achievement in psychology among undergraduate students?

1.4 Hypotheses

The following null hypotheses (H₀) were tested at 0.05 level of significance.

1. There is no significant effect of the collaboration method compared to the traditional lecture-based method in promoting achievement in psychology among undergraduate students.
2. There is no significant difference in comparative mean achievement scores of males and females using collaboration methods and lecture methods of learning in promoting achievement in psychology among undergraduate students.

2. Methodology

The study adopted a quasi-experimental design with a pre-test, post-test, and control group approach. The study was conducted in the Obio/Akpor Local Government Area of Rivers State in Nigeria. The study population comprised 400 students from the Faculty of Education at the University of Port Harcourt, Rivers State. The stratified sampling technique was used to obtain 90 (40 male and 50 female) students who were randomly assigned to two groups. Randomization was achieved through counting off 1 and 2 by the two stratified groups and then forming the two groups by combining males and females based on the counting off. The two groups were then assigned to the experimental and control groups. The experimental groups were taught using the collaboration method, while the control groups were taught using the lecture method for a period of six weeks. The instrument for data collection was a 20-item multiple-choice test titled Psychology Achievement Test (PAT), and the Kuder-Richardson method (K-R 20) was used to obtain a reliability index of 0.87. The research questions were analyzed using mean and standard deviation, while the null hypotheses were tested using Analysis of Covariance (ANCOVA) at 0.05 level of significance.

2.1 Limitations of the Study

A major limitation of this study is the paucity of literature review on the subject matter, which is a comparative analysis of collaboration and lecture methods in promoting achievement in psychology. Another limitation was that the students were randomly assigned to groups using counting off, which does not guarantee that the two groups are nearly identical in terms of achievement in psychology at the beginning of the experiment. Lastly, the groups were taught using the assigned lecture methods for only six weeks, which may not be sufficient for

manipulation and thus constitutes methodological flaws and failure to produce a measurable change in the dependent variable.

3. Results

Research Question One: What are the effects of collaboration methods compared to traditional lecture-based in promoting achievement in psychology among undergraduate students?

Table 1: Mean Scores of participants taught using the collaboration and the traditional lecture-based method.

	Pretest				Posttest				Mean Difference
	N	Mean	S.D	SUM	N	Mean	S.D	SUM	
Collaboration	45	52.47	17.44	2361	45	78.44	12.73	3530	25.97
Lecture	45	63.42	17.88	2854	45	67.67	14.56	3045	4.25

Table 1 shows that the students' pretest and posttest mean achievement scores of students taught psychology using the collaboration method are 52.47 and 78.44, respectively, and their standard deviations are 17.44 and 12.73, respectively, with a mean difference of 25.97. Moreover, the student's pretest and posttest mean scores for the traditional lecture-based method are 63.42 and 67.67, respectively, and their standard deviations are 17.88 and 14.56, respectively, with a mean difference of 4.25. So it means that those treated with the collaboration method had a higher mean than their counterpart that was treated with the lecture method in their posttest. This is an indication that those taught using collaboration outperformed their lecture method counterparts. The result is in line with that of Awoniyi and Kamanga (2014) who concluded in their research that concludes that Cooperative learning strategy is more effective than the traditional instructional method.

Research Question Two: What are the comparative mean achievement scores of male and female using collaboration methods and lecture methods of learning in promoting achievement in psychology among undergraduate students?

Table 2: Mean Scores of male and female participants taught using the collaboration method and Lecture Method.

	MALE				FEMALE				Mean Difference
	N	Mean	S.D	SUM	N	Mean	S.D	SUM	
Collaborative	20	81.95	10.86	1639	25	75.64	13.60	1891	6.31
Lecture	20	69.55	17.50	1391	25	66.16	11.87	1654	3.39

The above table shows that for the collaboration method; the male and female students had the mean -score of 81.95 and 75.64 respectively. For the Lecture method,

the male and female students had the mean-score of 69.55 and 66.16 respectively. From the result, it is evident that the scores of the male students differ from the female students in the two groups because the male students had a higher mean-score than the female students. This is an indication that male students outperformed their female counterpart.

Hypothesis One: There is no significant effect of collaboration methods compared to traditional lecture-based methods in promoting achievement in psychology among undergraduate psychology students.

Table 3: Summary of Analysis of Covariance (ANCOVA) on the achievement of students in the Experimental group and Control group.

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	2694.260 ^a	2	1347.130	7.158	.001	.141
Intercept	36640.306	1	36640.306	194.675	.000	.691
Collaboration	80.649	1	80.649	.428	.514	.005
Lecture	2648.963	1	2648.963	14.074	.000	.139
Error	16374.462	87	188.212			
Total	499409.000	90				
Corrected Total	19068.722	89				

a. R Squared = .141 (Adjusted R Squared = .122)

Table 3 showed a significant difference between students treated using collaboration methods and traditional lecture-based methods ($F=14.074$, $P<0.00$). Hence, the null hypothesis was rejected at a 0.05 significance level. This implies that the difference between the achievement of students in the two groups (collaboration and traditional lecture-based) differs significantly. The finding agrees with the study of Terenzini, Cabrera, Colbeck and Parente (2001) who discovered greater effectiveness of active and collaborative learning compared with more traditional approaches in developing students' engineering skills.

Hypothesis Two: There is no significant difference in comparative mean achievement scores of male and female using collaboration methods and lecture methods of learning in promoting achievement in psychology among undergraduate students.

Table 4: Summary of Analysis of Covariance (ANCOVA) on the difference in the achievement of male and female students taught using collaboration and Lecture methods.

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
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Corrected Model	3234.172 ^a	4	808.543	4.340	.003	.170
Intercept	37057.996	1	37057.996	198.928	.000	.701
Collaborative	50.470	1	50.470	.271	.604	.003
Lecture	3188.876	3	1062.959	5.706	.001	.168
Error	15834.550	87	186.289			
Total	499409.000	90				
Corrected Total	19068.722	89				

a. R Squared = .170 (Adjusted R Squared = .131)

Table 4 showed a significant difference between students treated using collaboration and lecture methods ($F=5.706$, $P<0.01$). Hence, the null hypothesis was rejected at a 0.05 significance level. This implies that the difference between the achievement of male and female students taught psychology in the two groups (collaboration and lecture) differs significantly. The findings may be due to the fact that cooperative learning encourages greater engagement, collaboration, and significant interaction among students, ultimately leading to improved academic performance (Awoniyi and Kamanga, 2014)

4. Findings

Following are the findings of the study:

1. Students taught using collaboration in psychology outperformed their lecture method counterparts.
2. The male students outperformed their female counterpart in the use of collaboration and lecture methods in the teaching of psychology.
3. There is a significant difference between the achievement of students taught psychology using collaboration and traditional lecture-based methods
4. Significant difference exists between the achievement of male and female students taught psychology using collaboration and lecture methods of teaching

4.1 Discussion of Findings

It is evident from the study that students taught psychology using the collaborative method outperformed their counterparts in the lecture method. Collaborative teaching methods offer significant advantages over traditional lecture-based approaches in promoting literacy among undergraduate psychology students. The collaborative methods foster active engagement, critical thinking, communication skills, and motivation, all of which are crucial for achievement in psychology. The findings of the study are in line with those of Awoniyi and Kamanga (2014), Farzad & Forouzan (2015), and Terenzini, Cabrera, Colbeck, and Parente (2001), who concluded from their studies that the Cooperative learning strategy is more effective than the traditional instructional method

Collaborative teaching methods positively impact the academic achievement of both male and female undergraduate psychology students, although the male students outperformed their female counterparts in

both the pre-test and post-test. The finding is in disagreement with that of Gillies (2006), who discovered that female students benefit substantially from collaborative methods. Research suggests that females outperform males in certain collaborative tasks, particularly those requiring communication, teamwork, and empathy, skills in which they often excel.

5. Conclusion

The findings of the study revealed that collaborative methods significantly enhance achievement in psychology by students compared to traditional lecture-based approaches. The collaborative methods support active learning, critical thinking, effective communication, and increased motivation, which are essential components of achievement in psychology. The study concludes that a hybrid approach, incorporating the best elements of both traditional and modern approaches, such as collaboration, may offer the most comprehensive benefits for diverse learning environments.

6. Recommendations

Based on the findings, the study recommended that:

1. Teachers should regularly assess the effectiveness of teaching methods through student feedback, assessment data, and observation.
2. A blended approach that incorporates traditional, collaborative methods and other strategies should be adopted to maximize educational outcomes. A teacher is not expected to be dogmatic in his or her approach to teaching.

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