

PERCEPTION OF PEER-TUTORING PEDAGOGICAL APPROACH AMONG
UNDERGRADUATE STUDENTS OF FEDERAL UNIVERSITY OF TECHNOLOGY
MINNA

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ABSTRACT

This study investigated the Perception of a Peer-Tutoring Pedagogical Approach Among Undergraduate Students of the Federal University of Technology, Minna. Nine schools were selected from the Federal University of Technology, Minna was used as the population of the study. Descriptive survey research was employed, and Undergraduate Students of Federal University of Technology, Minna, were used as the research samples. Four research questions guided the study, and a 20-item questionnaire was used as an instrument for data collection. The questionnaire was validated by the project supervisors and test and measurement experts. The pilot study was carried out, and reliability coefficients of 0.89 were obtained for the questionnaire. Data collected from the administration of the research instruments were analyzed using descriptive statistics of Mean (X) and Standard Deviation (SD). A decision rule was set, in which a mean score of 4.0 and above was considered Agreed or Aware while a mean score below 3.0 was considered Disagreed or unperceived. Findings revealed that Undergraduate Students Perception of the Peer-tutoring Pedagogical Approach (PTPA) was unperceived by the respondents. Based on the results, it was recommended that Science students keep improving in their pedagogical approach to help them take an interest in learning abstract topics and improve in their science subjects.

1.0 INTRODUCTION

Peer-tutoring is "a system of instruction in which learners help each other and learn from themselves by teaching" (Goodlad & Hirst, 2016). Key to this definition is the word 'peer' meaning someone with the same or nearly equal status as the person being tutored, who, such, is not a professional instructor. Peer-tutoring has played an essential part in education and has probably existed in some incarnation since the beginning of civilization. But the first recorded use of an organized, systematic peer tutorial learning project in the Western World didn't come about until the late 1700s. Arising from school budget woes in the late 18th and early 19th centuries, Peer-tutoring became an effective way of giving underprivileged (at that time, sadly the only male) children a reasonable shot at an education. The first systematic approach to Peer-tutoring is credited to Andrew Bell, the superintendent of the Military Madras Asylum at Egmore in England. Peer-tutoring in the United States has long been used in a college setting, dating back to 1640, when the first paid student tutor was hired by Harvard University "to counsel and befriend the younger lads" (Dwyer, 1989, in Mann, 2014). In the 1960s, with the resurgence of educational innovation in the United States, Peer-tutoring gained great popularity at all levels of schooling. More recently, educators have begun to experiment with different types of Peer-tutoring, looking to fit the method to their student's specific needs and abilities.

Today, with increasing college and university enrollment, graduate and undergraduate student paraprofessionals have become an integral feature of the educational structure, serving in many different capacities: teaching assistants, subject-matter tutors, lab assistants, small-group discussion leaders, counsellors, and in some cases, primary instructors for introductory-level courses. Hott (2017), defined Peer-tutoring as a flexible, peer-mediated strategy that involves

students serving as academic tutors and tutees. Typically, a higher-performing student is paired with a lower performing student to review critical academic or behavioural concepts. The Peer-tutoring refers to an instructional method that uses pairings of high-performing students to tutor lower-performing students in a class-wide setting or a common venue outside of school under the supervision of a teacher.

Peer-teaching or Peer-tutoring, is an instrumental strategy in which advanced students, or those in later years, take on a limited instructional role. It often requires some form of credit payment for the person acting as the teacher. Peer-teaching is a well-established practice at many universities. Peer-tutoring is an instructional strategy that consists of student partnerships linking high achieving students with lower achieving students or those with comparable achievement, for structured reading and math study sessions. Thus, Peer-tutoring is a "systematic, peer-mediated teaching strategy". According to Scruggs *et al.*, (2017), Peer-tutoring is the instructional strategy where students are trained to work in pairs with their partners to improve their overall knowledge. They learn to use tutoring materials, take turns as the tutor and the tutee, ask the questions appropriately, and positively deliver feedback. In Peer-tutoring, students practice content information in tutoring pairs rather than whole-class learning. This significant structural difference allows for considerable flexibility in individual peer instruction (Scruggs *et al.*, 2017). Peer-tutoring will enable students to proceed with the content material at their own pace. It also provides separate time for the individual mastery of each student in the tutoring pair. For example, suppose one student has mastered the topic faster than the other. In that case, that individual could stay in the role of tutor for a more extended period until the tutee develops a better understanding of the material.

Peer learning is a broad learning strategy. It covers a wide range of activities through which people learn through different approaches. These activities ranged from a traditional proctor model in schools to the more innovative learning groups in colleges and universities. In the proctor model, the senior students act as tutors and junior students as tutees. On the other hand, in creative learning groups, students of the same age group or level help each other by forming partnerships. Other models include discussions, seminars, private study groups, counselling, peer-assessment schemes, collaborative project or laboratory work, workplace mentoring, and community activities (Topping, 2015). Through this approach (model), the students learn significantly by elaborating their views to others. They also participate in such kinds of activities in which they can learn from their peers (Streitwieser & Light, 2018). Peer learning enables the students to develop their skills to organize and plan learning activities, collaborate with others, give and receive feedback about their work, and evaluate their learning. Nowadays, the importance of peer learning is increasing, and it has become part of many courses in a wide range of contexts and disciplines in many countries of the world (Topping, 2015).

1.1 Statement of the Problem

The efficacy of Peer-tutoring as a platform for providing personal and academic support among students is continuously being challenged by factors such as declining faculty-to-student ratio and students' under-preparedness. This study intends to examine the various adopted Peer-tutoring approaches as an instructional strategy among undergraduate students in the Federal University of Technology Minna. The findings from previous research highlighted the delicate imbalance between the obvious benefits and the unintended consequences of various approaches used during peer to Peer-tutoring. The apparent benefits of Peer-tutoring include opportunities for synergistic peer learning, healthy competition among students, and self-directed learning. However, the benefits of Peer-tutoring are negated by factors such as a low level of trust among peers, anxiety over year marks, time constraints, and discomfort due to perceived incompetency compared to their peers. Finally, the finding from the present study tends to provide opportunities for iterative model and design (approach) and continuous improvement.

1.2 Objective of the Study

This study aims to survey the influence of undergraduate students' peer-tutoring pedagogical approach in the federal university of Technology Minna. Specifically, the study sought to:

1. Determine the type of perception undergraduate students have toward Peer-tutoring Pedagogical Approach (PTPA).
2. Determine whether gender has an influence on Peer-tutoring Pedagogical Approach (PTPA) among undergraduate students.
3. Determine whether academic level influence the perception of Peer-tutoring Pedagogical Approach (PTPA) among undergraduate students.
4. Determine whether the place of residence influence the perception of the Peer-tutoring Pedagogical approach (PTPA) among undergraduate students.

1.3 Research Questions

1. What type of perception do undergraduate students have on Peer-tutoring Pedagogical Approach (PTPA)?
2. Does gender influence the perception of Peer-tutoring Pedagogical Approach (PTPA) among undergraduate students?
3. Does Academic level influence the perception of Peer-tutoring Pedagogical Approach (PTPA) among undergraduate students?
4. Does place of residence influence the perception of Peer-tutoring Pedagogical Approach (PTPA)?

1.4 Significance of the Study

The study would be significant in the following ways:

1. The Peer-tutoring findings will help the students interact with their fellow peer group and clarify their doubts. They will be placed in a more comfortable zone. The students can share their ideas, and creativity can also be induced through the Peer-tutoring method.
2. Peer-tutoring research will help the teachers establish new teaching strategy, i.e. it will add to teachers teaching skills.
3. Due to the complexity of factors affecting students learning in any given set-up, synergistic benefits of Peer-tutoring discovered from this research will clear off some factors such as negative perceptions and preferences towards the Peer-tutoring method, low level of trust among peers, anxiety over year marks, time constraints and discomfort due to perceived incompetency when compared to their peers.

2.0 METHODOLOGY

This study employed a descriptive survey design and the target population of the study for the undergraduate students of Federal University of Technology, Minna comprising 900 male and female. The sample is a smaller group of subjects obtained from the accessible population which measures the sample size of 10% of the target population (Mugenda 2013). Using the above formula to determine the sample size for the 900 respondents, random sampling technique was used to select 18 respondents from each school, making a total of 90 students plus five staff in charge of guidance and counselling, making a total of 95 respondents. Questionnaire entitled to Students' Perception of Peer-tutoring Pedagogical Approach Questionnaires (SPOPTPAQ) was used to obtain two different types of information: the first part began with demographic information, all students completed the second part which contained a student perception of the Peer-tutoring Approach which 20 items were contained in the questionnaire, and the third part was completed by teachers in charge of guidance and counselling only.

The instrument was validated by experts from the department of Science Education and Educational Technology in Federal University of Technology Minna. The reliability coefficient of 0.89 was obtained using Cronbach Alpha which indicates that the instrument

reliable for the study. The data collected was analyzed using mean (X) and standard deviation (SD) and the decision rule regarding disagreeing and agreeing of an item was based on a mean range of 0 - 3.99 as disagree and mean range of 4.0 - 7.0 as agree. Furthermore, a descriptive chart (bar, histogram and scatter plots) was also used to describe the result. The data analysis was done using a Statistical Package for Social Science (SPSS) version 23.0.

3.0 RESULTS AND DISCUSSION

3.1 Research Questions

RQ₁: What type of perception do undergraduate students have on Peer Pedagogical Approach (PTPA)??

Table 3.1: Mean score difference in Undergraduates Students Perception of Peer-tutoring Pedagogical Approach (PTPA).

S/N	STATEMENTS	VU	UT	SWU	N	PT	TR	VT	MEAN(X)	SD
1	Peer-tutoring or tutorials is also a suitable method of teaching	79	47	18	13	17	8	17	2.67	1.9
2	I understand more when learning with my peers	71	61	21	12	13	8	13	2.55	1.8
3	I ask questions and interact more with my peers during tutorials	85	44	16	13	17	10	14	2.59	1.9
4	Peer-tutoring has helped me improve a lot in the school	79	65	22	12	9	5	7	2.25	1.5
5	Peer-tutoring is suitable, but I hardly participate because it exposes me to bad influence amongst the students	28	29	26	28	12	31	45	4.21	2.1
									2.85	
GRAND MEAN										

Decision Mean = 4.00

Table 3.1. Shows the Mean score difference in Undergraduates Students Perception of Peer-tutoring Pedagogical Approach (PTPA). The Table reveals that the grand mean score responses to the five items was 2.85, which was greater more minor than the decision mean score of 4.00. This implies that Undergraduates Students in Minna do not perceive Peer-tutoring Pedagogical Approach (PTPA).

RQ₂: Does gender influence the perception of Peer-tutoring Pedagogical Approach (PTPA) among undergraduate students?

Table 3.2: Mean response of gender on the perception of Peer-tutoring among undergraduate students

S/N	Gender	N	Mean (X)	SD	Mean Difference
1	Male	84	20.75	5.805	0.235
2	Female	115	21.08	6.040	

Table 3.2: shows the mean response of gender on the perception of Peer-tutoring among undergraduate students. The result indicated a difference in the mean response of male and female with a mean score of 20.75 and standard deviation of 5.805 for males and mean score of 21.08 with a standard deviation of 6.040 for females.

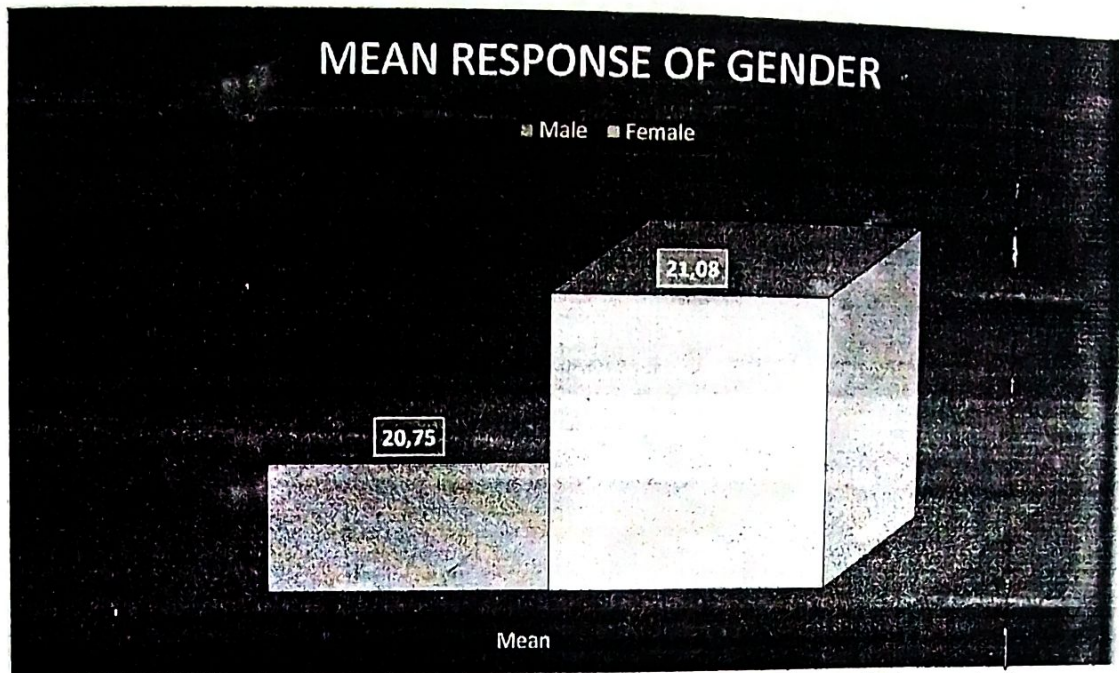


Fig 3.1 Shows mean response of gender on the perception of Peer-tutoring among undergraduate students

RQ3: Does academic level influence Tutoring Pedagogical Approach (PTPA) perception among undergraduate students?

Table 3.3: Mean academic level influence the perception of Tutoring Pedagogical Approach (PTPA) among undergraduate students

S/N	Academic Level	N	Mean (\bar{X})	SD
1	100	24	19.75	5.855
2	200	24	16.96	4.582
3	300	46	17.30	6.186
4	400	13	18.15	6.568
5	500	92	17.84	6.595

Table 3.3: shows the academic level that influences the Tutoring Pedagogical Approach (PTPA) perception among undergraduate students. The result shows mean of 100, 200, 300, 400 and 500 levels to be 19.75, 16.96, 17.30, 18.15 and 17.84, respectively, with 100 level having highest mean response and 200 level with the lowest mean answers.

MEAN ACADEMIC LEVEL

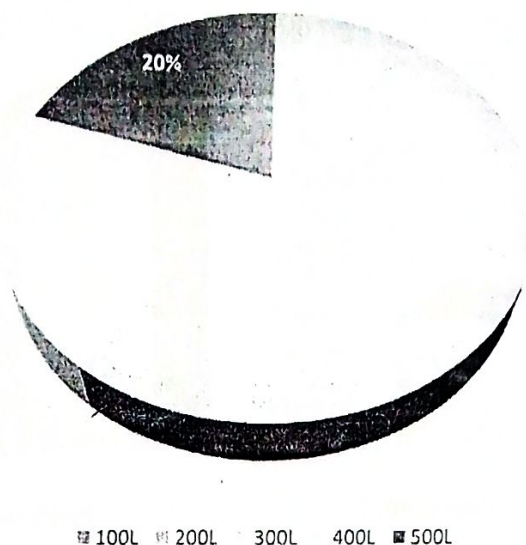


Fig 3.2: Shows mean response of academic level influence of Peer-tutoring among undergraduate students

RQ4: Does place of residence influence the perception of Peer-tutoring Pedagogical Approach (PTPA)

Table 3.4: Mean response of residence influence the perception of Peer-tutoring Pedagogical Approach (PTPA)

S/N	Residence	N	Mean (\bar{X})	SD	Mean Difference
1	School Hostel	56	16.66	6.150	0.34
2	Off-Campus	143	16.32	7.107	

Table 3.4: shows the mean response of residence influence the perception of Peer-tutoring Pedagogical Approach (PTPA). The result indicated a difference in the mean response students leaving in the School Hostel and students staying Off-Campus with a mean score of 16.66 and standard deviation of 6.150 for School Hostel and mean score of 16.32 with standard deviation of 7.107 for Off-Campus students.

MEAN RESPONSE OF RESIDENCE

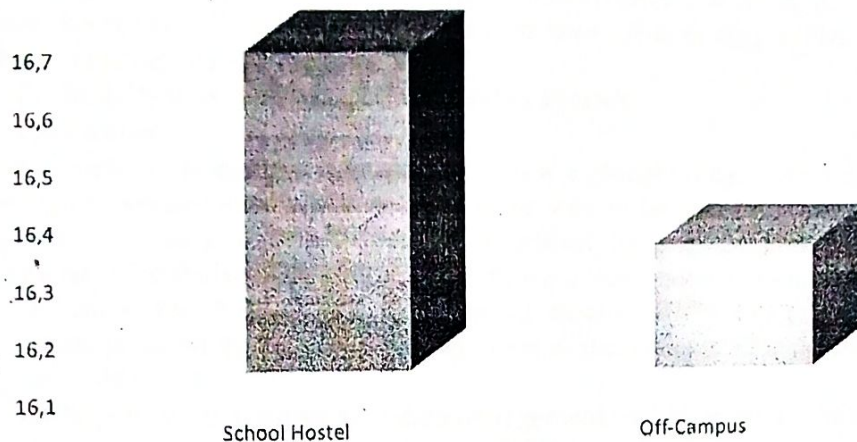


Fig 3.3: Shows mean response of residence influence of Peer-tutoring among undergraduate students

3.3 Summary of Findings

Findings that originated from this study revealed that:

1. Undergraduates Students Perception of Peer-tutoring Pedagogical Approach (PTPA) unperceived by the respondents.
2. Gender influence on perception of Peer-tutoring Pedagogical Approach (PTPA), female students use Peer-tutoring Pedagogical Approach (PTPA) than their counterparts.
3. On the academic level, Tutoring Pedagogical Approach (PTPA) perception among undergraduate students 100 level having the highest mean response and 200 level with lowest mean responses.
4. On the place of residence influence the perception of Peer-tutoring Pedagogical Approach (PTPA). Students in the school hostel use Peer-tutoring Pedagogical Approach (PTPA) than students off-campus.

3.4 Discussion of Findings

Findings of this study revealed Mean score difference in Undergraduates Students Perception of the Peer-tutoring Pedagogical Approach (PTPA). The Table indicates that the grand mean score of responses to the five items was 2.85, which was greater more minor than the decision mean score of 4.00. This implies that Undergraduates Students in Minna do not perceive Peer-tutoring Pedagogical Approach (PTPA). This finding agrees with the following studies (Topping, 2015; & Lawson, 2016). The findings of this study revealed the mean response of gender on the perception of Peer-tutoring among undergraduate students. The result indicates a difference in the mean response of male and female with a mean score of 20.75 and standard deviation of 5.805 for males and mean score of 21.08 with a standard deviation of 6.040 for females. This finding agrees with the following studies (Topping, 2015; & Lawson, 2016). Findings of this study revealed the academic level influence the perception of the Tutoring Pedagogical Approach (PTPA) among undergraduate students. The result shows mean of 100, 200, 300, 400 and 500 levels to be 19.75, 16.96, 17.30, 18.15 and 17.84 respectively, with 100 level groups having the highest mean response and 200 level with the lowest mean answers. This finding agrees with the following studies (Topping, 2015; & Lawson, 2016). Findings of this study revealed the mean response of residence influence the perception of the Peer-tutoring

VI. INTERNATIONAL HALICH CONGRESS ON MULTIDISCIPLINARY SCIENTIFIC RESEARCH

Pedagogical Approach (PTPA). The result indicated a difference in the mean response students leaving in the School Hostel and students staying Off-Campus with a mean score 16.66 and standard deviation of 6.150 for School Hostel and mean score of 16.32 with standard deviation of 7.107 for Off-Campus students. This finding agrees with the following studies: (Topping, 2015; & Lawson, 2016).

4.0 CONCLUSION AND RECOMMENDATIONS

4.1 Conclusion

For our students to compete in a world that is now a global village with rapid and continuous technological advancement, students need to be vast in knowledge. Given the finding, it is logical to conclude that Peer-tutoring is a critical issue to be addressed for the better performance of all students. Therefore, the following conclusion was drawn from the findings:

1. Avenues for Peer-tutoring Pedagogical Approach (PTPA) to be provided to the students either by the school management or the students' unions rather than engaging in politics only.
2. A high level of orientation and encouragement will be given to the students on using Peer-tutoring Pedagogical Approach (PTPA) as a learning strategy.

4.2 Recommendations

Based on the findings of the study, the following recommendations are made:

1. Science students should keep improving in their pedagogical approach to help science students learn abstract topics and improve in their science subjects.
2. Orientation, Workshops, seminars, symposia and conferences should be organized periodically to familiarize science students with recent research findings that would lead to effective and meaningful learning.

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