

ADVANCE SOCIAL SCIENCE ARCHIVE JOURNAL

Available Online: https://assajournal.com

Vol. 04 No. 01. July-September 2025. Page #. 2154-2166

Print ISSN: <u>3006-2497</u> Online ISSN: <u>3006-2500</u> Platform & Workflow by: <u>Open Journal Systems</u>



Teachers' Perspectives on Effectiveness of Activity-Based Learning for Boosting Students' Motivation

Naeem Fatima Lashari

MPhil scholar

Department of Teacher Education Shah Abdul Latif University Khairpur

naeemfatimalashari@gmail.com

Dr. Firdous Bugti

Assistant Professor at Department of Teacher Education, Shah Abdul Latif University Khairpur <u>Firdous.bugti@salu.edu.pk</u>

Zaheer Abbas Chang

Director provincial Institute of Teacher Education (PITE) Sindh zaheerchang11@gmail.com

Abstract:

A teacher initiates activity-based learning as a process to enable understanding of students through activity-based engagement and motivation. The key purpose of this study was to understand teachers' views about Activity-Based Learning's implementation process in primary schools. The researchers have selected quantitative research as their method for this particular study. Seventy six primary school teachers were selected for the research sample that was collected through convenient random sampling. The data measurement tool was created using a five-point Likert scale. The descriptive analytical techniques involved frequency and percentage to examine data. Research findings showed that teaching through activities positively affected students' motivation. Most of the surveyed female teachers actively supported teaching-learning strategy implementation in activity based learning at higher rates than their male counterparts. This study recommended that workshops with seminars need to be organized for teacher training programs that focus on implementing activity-based learning in primary classrooms.

Key Words: Activity-based learning, primary school teacher, teaching learning strategies, teachers' perceptions, implementation and students' motivation, primary school level.

1. Introduction:

1.1. Background information:

Activity-based learning is a type of learning that nurtures engagement, critical thinking, and a more pleasing learning experience, vital role in enhancing academic outcomes. [1] believed that activity-based education offers several aids in cooperation of primary school teachers and students, such for instance reinforcement of instructional content, evolving team work competencies, cumulative pupil esteem, boosting wisdom to contribute, and solution finding. It

supports building up students' communication skills to empower the hands-on presentation of educational material to enhance communication with numerous teaching aids. It is a technique that spectacles potential and progress education because it fire support for students to develop further innovative ideas and enhances their understanding in this regard, and is personalized to their needs [2]. Teaching learning strategies are the pivotal factors that influence the activity-based learning in students' motivation and enhance their better understanding and active participation in educational activities. The students are on the go as an alternative of impassive [3]. The study of [4] led to activity-based teaching's results actuality well than traditional methods. [1] Labeled that activity-based education is a more fascinating way of teaching than the lecture method. ABL is a new tactic to teaching, and engaging students in action is its straightforward share [5]. In an activity-based model of teaching, students are regularly demanding perceiving and inspecting their environments [6]. [7] Believed that in an activity-based class, learners are tortuous in the learning technique. Activities have optimistic properties on students' learning in the subject of mathematics [8].

1.2. Research problem:

The current research study identifies the effectiveness of activity-based learning in promoting students' motivation in primary school level. This study attempts to find out the answer that what are the perceptions of teachers in implementation of activity - based learning and their strategies towards activity based teaching and learning process and their effectiveness. [9] publicizes that activity-based learning helps students and learners to build intellectual mockups that permit for higher-order presentation, as per everyday problem cracking and allocation of data and skills.

1.3. Significance of Research:

The research has major importance because it examines how primary teachers perceive the enactment of activity-based learning and its impact on student motivation at FaizGanj Taluka. The position of multiple activities and their daily implementation in teaching methodologies is explained by[10] ABL represents a cognitive-learning technique producing productive learning outcomes because of his excellent implementation practices.

The research purpose focused on evaluating how activity-based learning influences student motivation and determines its impact on classroom achievement results.

Research Objectives:

- 1. To identify the effectiveness of activity-based learning in promoting students' motivation at the primary school level.
- 2. To find out the Teachers' perceptions about the implementation of activity-based learning at the primary school level.

Research Questions:

- 1. What is the effectiveness of activity-based learning in promoting students' motivation at the primary school level?
- 2. What are the Teachers' perceptions about the implementation of activity-based learning at the primary school level?

2. Literature Review:

2.1. Overview of relevant literature:

The most essential foundation of education is a teacher alongside their teaching methods because they drive classroom lessons through diverse instructional practices. The current century requires activity-based learning because teachers need different methods to assess students' learning needs while identifying multiple intelligences combined with individual differences based on present time requirements.

2.2. Key theories or concepts:

[11] Describes Activity Based Learning as a practical learning method where students take direct participation rather than staying as uninvolved listeners during teaching activities. The writer describes two main differences between traditional teaching approaches and active learning: first, students take an active position in their learning environment and second, students work together with classmates. Activity-based learning operates as student-centered education according to [12] because it delivers fascinating instructional activities. Research studies demonstrate that teacher recourse limitations force them to deliver standard lectures per [13] Science education together with other subjects primarily delivered through lectures exists regrettably at the primary level [14] Educational routines linked to habits overshadow the ability to understand scientific concepts, phenomena and theories [15] At the same time [16]revealed that traditional Science teaching strategies are inefficient for student learning yet the changing perception of Science education needs transformation. Educational staff must progressively adopt activity-based educational approaches in classroom instruction regardless of all existing circumstances.

2.3. Gaps or Controversies in the Literature:

A research study evaluated activity-based learning methods which promote motivation levels among students at primary school in Taluka FaizGanj (2025). Activity-Based Learning (ABL) Concept is a cognitive-learning approach which follows the "constructivist" learning theory created by George Hein. According to this learning theory a student creates his own simplified knowledge model by connecting new facts to his prior knowledge and existing occurrences. Pursuing new information becomes an active process for students who continuously engage in the stages of integrating and presenting information. The initiators introduce learners to exact real-world problems instead of using a problem-solving method catalog. This learning approach also promotes problem-based education thus earning its additional name as a problem-based learning theory. The implementation of ABL elements functions as an effective strategy to develop better learning practices within the student body.

The research review proved that activity-based learning demonstrates strong positive results concerning student learning outcomes and motivation across most academic areas. The current Taluka educational program also follows this approach. Study objectives include exploring the effectiveness of activity-based learning as a motivation booster at primary school level and determining teacher beliefs about implementing activity-based learning at the primary school

level. Through this research we need to interact with primary school educators to understand their thoughts and methods used during instruction sessions.

The research will address missing information in academic literature and show how ABL enhances student motivation. The authorization enables mentors to execute and use activity-based learning effectively in motivating their learners. Continuous development trainings about teaching activity design should become a regular offering from teacher training institutions to their instructors. The delivery of our activity-based curriculum together with motivated students will be successful through this process.

3. Methodology:

3.1. Research design:

Research seeks to evaluate how well activity-based learning stimulates student motivation during primary school education at Taluka FaizGanj. The current study employs the quantitative approach to investigate its subject.

3.2. Data collection method:

Survey research was used to get information from primary school instructors working at Taluka FaizGanj. The research tool was created based on the objectives of the study and the review of the literature, the researcher recycled online survey questionnaire on five-point likert scale as a tool consisting of 20 closed-ended items which were adopted from https://www.humapub.com on 5th April 2025. This study includes teachers' opinions on the application of activity based learning and the techniques applied in activity based learning to ascertain the efficacy of activity based learning in motivating their pupils at primary school level in Taluka FaizGanj.

3.3. Sample Selection:

The survey questionnaire was distributed among 150 Primary school teachers of Taluka Faiz Ganj and some responded that questionnaire and made up the study sample which totaled 76. The investigators applied convenient random sampling to obtain data from all target participants.

3.4. Data Analysis techniques:

An assessment of the quantitative data gathered through surveys with Taluka FaizGanj's 76 primary school teachers occurred by using Statistical Package for Social Sciences (SPSS) version 23.0. The researchers applied statistical analysis methods where frequency and percentage represented the data analysis results.

4. Results:

4.1. Presentation of findings:

The researchers obtained data from primary educators who worked at primary educational institutions across Taluka FaizGanj by using a Likert Scale questionnaire. The survey tool obtained from existing research was organized into demographic and two main sections about activity-based learning implementation and teaching methods. The evaluation of results occurred through SPSS version 23.

4.1.1. Demographic information:

Table 1:

Gender of the respondents								
		Freq.	%	Valid %	Cumulative %			
Valid	Male	37	48.7	48.7	48.7			
	Female	39	51.3	51.3	100.0			
	Total	76	100.0	100.0				

Table 1 shows that a bigger proportion of female teachers 52% participated in the study as compared to male teachers 48%. where many of the respondents have the level of education was Master's degree.

4.1.2. Education of the respondents:

Table 2:

Education of the respondents								
		Freq.	%	Valid %	Cumulative %			
Valid	Bachelors	22	28.9	28.9	28.9			
	Masters	29	38.2	38.2	67.1			
	M.Phil	25	32.9	32.9	100.0			
	Total	76	100.0	100.0				

4.1.3. Teachers' Perceptions regarding the Implementation of Activity Based Learning and their tactics employed in activity-based learning.

Table 3:

Statements		Strongly Agree	Agree	Neutral	Disa	agree	Strongly	
Teachers' perceptions about the implementation ofactivity based learning.								
1. Primary classrooms require activity-based teaching.	F %	25 32.9	18 23.7	18 23.7	9	11.8	6 7.9	
2. The exercises that are utilized in the classroom are highly engaging.	F %	22 28.9	24 31.6	17 22.4	7	9.2	6 7.9	
3. Activities might, in my opinion, be of any scale.	F %	27 35.5	23 30.3	13 17.1	7	9.2	6 7.9	
4. Even when I'm not in class, I occasionally catch myself thinking about the activities.	F %	25 32.9	24 31.6	14 18.4	7	9.2	6 7.9	

					_				
5. I get enough feedback on how I respond to the queries that students pose in class.	F %	25 32.9	23 30.3	15 19.7	7 9.2		6 7.9		
6. It looks that since the new curriculum was established, I've added more activities to my lessons.	F %	22 28.9	24 31.6	17 22.4	7 9.2		6 7.9		
7. Students became more interested in the lessons after I began incorporating activities from the new curriculum into my lesson plans.	F %	20 26.3	27 35.5	18 23.7	6 7	.9	5 6.6		
8. The activities suggested to teachers in textbooks are adequate in terms of content, level, and purpose.	F %	24 31.6	28 36.8	14 18.4	5 6	.6	5 6.6		
9. I've been using information technology more often to create lesson plans.	F %	26 34.2	27 35.5	13 17.1	5 6.6		5 6.6		
10. I am able to adequately analyze and appraise the kids' performance following each task.		26 34.2	25 32.9	15 19.7	5 6.6		5 6.6		
Teaching-Learning Strategies used in Activity-Based learning:									
11. To start the activity, the students decide what they want to achieve.	F %	24 31.6	26 34.2	16 21.1	6 7.9		4 5.3		
12. They plan how they are going to finish the assignment.	F %	23 30.3	30 39.5	12 15.8	7 9.2		4	5.3	
13. Before starting the task, the students are certain that they will complete it successfully.	F %	23 30.3	29 38.2	13 17.1	7 9.2		4 5.3		
14. The pupils believe they will perform well.	F %	26 34.2	24 31.6	14 18.4	7 9.2		5 6.6		

15. The pupils occasionally feel terrific after completing it.	F %	25 32.9	26 34.2	13 17.1	8 10.5	4 5.3	
16. Students must be interested in what they are doing.	F %	29 38.2	25 32.9	10 13.2	8 10.5	4 5.3	3
17. The students' main goal is to truly understand what they need to do.	F %	29 38.2	21 27.6	15 19.7	7 9.2	4 5.3	
18. Students want to demonstrate to the teacher that they are good learners.	F %	28 36.8	23 30.3	14 18.4	7 9.2	4 5.3	3
19. The pupils communicate with one another as they move through the steps.	F %	27 35.5	24 31.6	13 17.1	8 10.5	4 5.3	
20. If things do not go as planned, the students experiment with various approaches.	F %	28 36.8	24 31.6	13 17.1	7 9.2	4 5.3	

Table 3 represents two parts the first one is the teachers' perceptions about the implementation of activity based learning:

Item 1: Primary classrooms require activity-based teaching, majority of the respondents (56.6%) agree that Primary classrooms require activity-based teaching. Whereas the same time very few of the respondents were disagrees .Acclaims that activity based learning is the basic need of the students of primary school.

Item 2: The exercises that are utilized in the classroom are highly engaging, in the response of this item many of the respondents were agree (60.5%) that activities used in class are very interesting but some respondents were disagree, so it is clear from the majority agreed responses that activity based learning and teaching are very interesting towards teaching learning process.

Item 3: Activities might, in my opinion, be of any scale. In the response of this item 65.5% respondents were agreed that Activities might, in my opinion, be of any scale, and minority of the respondents were disagree about that idea.

Item 4: Even when I'm not in class, I occasionally catch myself thinking about the activities, in the response of this item 64.5% were agree and show their response that they were thinking about their class activities even they are not in class where as some respondents were in the neutral stage and cannot decide whether they were agree or disagree. At the same time, only 17% disagreed. These all responses highlight that a teacher who used an activity-based learning process in teaching found himself thinking about the activities even when he was not in the class.

Item 5: I get enough feedback on how I respond to the queries that students pose in class , majority of the respondents were agree which is about 63.2% that they collect satisfactory responses of the questions which raises in class but very few of them were disagree that they can't receive satisfactory responses.

Item 6: The number of activities that I implemented in my lessons has increased apparently since the new curriculum was put in action, responses of this item were agreed in majority 60.5% and 22.7% were still confused to give their response, at the same time 16.5% were disagree that the activities which they implement in the class increased apparently since the new curriculum set to accomplish.

Item 7: Students became more interested in the lessons after I began incorporating activities from the new curriculum into my lesson plans. In the response to this item, 61.8% of respondents agreed and very few of them disagreed that the activities implemented in the lessons with the new curriculum can get more interest in students' learning outcomes.

Item 8: The activities suggested to teachers in textbooks are adequate in terms of content, level, and purpose, in the response of this item 68.4% were agree in which higher number of respondents were strongly agree that activities which were mentioned in the textbooks are necessary for the content of level.

Item 9: I've been using information technology more often to create lesson plans. Keeping in view the responses on this item, the majority of the respondents, 69.7% were agreed that they would adopt information technology to prepare activities to enhance their teaching and learning process.

Item 10: I am able to adequately analyze and appraise the kids' performance following each task., in this item 67.1% respondents were agree that after each activity they can easily evaluate and assess their students' performance.

Item 11: To start the activity, the students decide what they want to achieve, in the response of this item majority of the respondents 65.8% were agreed and very few of them were not decided whether they were agree or disagree .at same time some of the respondents were disagree that students begin activity by identifying their goals.

Item 12: They plan how they are going to finish the assignment. This item completely shows the strategies used by the teachers in the class ,69.8% of the respondents were agree that before going to start an activity or an assignment they make a plan how to perform it and gain fruitful results from that assignment or activity and also planned how to compete it.

Item 13: Before starting the task, the students are certain that they will complete it successfully. This item shows students' enthusiasm towards activities and their motivation and confident when they learn through activity based learning .68.5% of the respondents were agree that their students were confident about doing any activity before they start it.

Item 14: The pupils believe they will perform well. In the response of this item 65.8% were agree that when they were going to perform any activity in the class ,their students think that they will do it in an organized manner.

Item 15: The pupils occasionally feel terrific after completing it.67.1% of the respondents agreed that by completing an activity, their students feel proud that they have done it.

Item 16: Students must be interested in what they are doing, majority of the respondents 71.1% were agreed that it is necessary for the students that they should be interested in what they are doing.

Item 17: The students' main goal is to truly understand what they need to do. Responses of this item consisting of 65.8% agreed respondents that their students recognize the main aim of the task or activity which they were going to be performed and also knew the purpose behind their actions.

Item 18: Students want to demonstrate to the teacher that they are good learners, majority of the respondents (67.1%) were agree that their student' aim was to be the good student in front of teacher

Item 19: The pupils communicate with one another as they move through the steps. In the response of this item 67.1 % were agreed that by activity based teaching students collaborate with each other slowly and gradually when they were working together.

Item 20: If things do not go as planned, the students experiment with various approaches. In this item 68.4% respondents agreed that by implementing activity based learning their students try diverse methods for doing their best if they feel that things were not going well.

4.2. Data analysis and interpretation:

This study describes that majority of the teachers of Taluka FaizGanj were implementing activity based learning in their teaching career and students' getting more and most beneficent outcomes because it is observed from the responses of the respondents that activity based learning is necessary for primary classes and the students were trying their best for performing in a well manner and teachers who were using strategies of activity based learning got better outcomes and their students try different ways for doing their best. By implementing the strategies of activity based learning 71.1% teachers agreed that interest of students is most important for their learning.

4.3. Support for research questions:

Research questions of this research study was designed on the basis of objectives of the study and was organized in the manner to meet with the variables (dependent and independent) of the title which are the activity based learning (dependent variable) and students' motivation (independent variable) of this study in order to gain satisfactory responds and to achieve the objectives of the study .The main support of the research questions are the effectiveness of activity based learning in promoting students' motivation and teachers' perceptions about the implementation of activity based learning and their strategies of teacher.

5. Discussion:

5.1. Interpretation of results:

This research study identifies the effectiveness of activity based learning in promoting students' motivation and the strategies teachers used in activity based learning and their perceptions to implement activity based learning at primary school level at Taluka FaizGanj .In regards to the

perceptions of the teachers many teachers said and accept that by implementing activity based learning in primary classes students got confidence so ABL is very important for primary classes .By adopting activity based learning students identified their goal and try their best to become good student .It is prominent from the findings that ABL is very important for primary school level and its application in teaching learning process made the process more effective and dynamic .This research study also defined that by applying ABL in teaching learning process students collaborate with each other and ready to work together as a team and this was the actual demand of activity based learning.

5.2. Comparison with existing literature:

These findings similar with prior studies, on the other hand this research study supplements something new to the combination by providing the teachers' perspectives on the effectiveness of activity based learning, the first objective of the study is to identify the effectiveness of activity based learning in promoting students' motivation at primary school level in Taluka FaizGanj and second one is to find out the teachers' perceptions about the implementation of activity based learning .To meet the objectives questionnaire was designed on two sub factors, teachers' perceptions and their strategies used in activity based learning and it was clear from the results and responses that by using diverse strategies for activity based learning students were fully motivated and work together as a team. correspondingly, [17] in her study of activity-based instruction approaches in classrooms, bring into being that pupils agreed the notions and recorded greater maintenance amounts while they aggressively contributed in lessons. The experimental results of student hazardous behavior in activity-based learning differ from previous research as reported by [18] and [19] during this investigation. The researchers did not discover evidence that students possess a natural tendency to become hazardous during active learning. The testing was performed with limited students from the group while students participated readily and voluntarily because they knew one another well.

5.3. Implications and limitations of the study:

This research study implements various practical applications that affect the real world. At the primary school level activity based learning demonstrates strong influence on student motivation while the study showed students paid more attention to practical learning activities because these activities aided knowledge acquisition and produced high levels of student enthusiasm. The research demonstrates how teachers utilized their strategies throughout activity-based learning implementation and their resulting perceptions. Through activity-based learning teachers observed more student engagement while students achieved better levels of motivation along with recognizing their educational targets.

This research study used specified methods to make valuable contributions yet it faces certain restrictions because the sample included seventy teachers from the primary schools in Taluka FaizGanj who were chosen by convenience. This investigation collects information about educator opinions regarding activity based learning implementation along with their methods of implementing activity based learning in Taluka FaizGanj.

Further studies need to evaluate activities to prove their effectiveness in fostering student motivation since research provides exclusive but general insights at the population level.

6. Conclusion:

6.1. Summary of key findings:

The goal of this study is to assess how activity-based learning improves student motivation, according to perceptions from primary school teachers. This study revealed that most teachers employ various methods to deliver ABL in the classroom because they understand how this method significantly boosts student motivation through active learning and critical thinking with entertaining outcomes that increases academic achievement while students participate in classroom activities.

6.2. Contribution of the field:

The educational staff in Taluka FaizGanj actively participates in activity-based teaching methods that encourage student motivation within primary schools. Activity based learning provides students practical activities that produce an environment which students find both entertaining and interactive. When doing activities students discover their objectives while striving for task success thanks to ABL which builds student courage and enables them to relate school knowledge to practical experiences thus increasing their desire to learn. Students express both self-assurance and pride regarding their accomplishment of each activity when they finish.

6.3. Recommendations for future research:

Several recommended steps need to be followed because of the existing research findings. Teachers must work together with the class association to design exciting learning activities because activity-based learning requires a qualified teacher as its foundation. FaizGanj teaching staff requires advanced continuous professional development in order to implement and utilize activity-based learning methods effectively. Teachers need to develop activity-based learning approaches that stem from their students' real-life conditions and personal experiences. Teachers should perform assessments on each activity-based learning to evaluate its respective outputs. Researchers and teachers should demonstrate excitement when developing new operational activities while maintaining their self-generated motivation. Strategic planning of workshops and seminars should support teacher development when postulating activity-based schooling techniques within primary classes. The classroom employment of activity-based education needs sufficient timing which primary schools should designate specifically for this purpose. For primary teachers to complete the classroom implementation of activity-based teaching-learning processes an additional teacher should be dedicated through contractual agreement.

7. References:

A. Citations of all sources used in the paper:

1. Anwer, S. Li, H., Antwi-Afari, M. F., & Wong, A. Y. L. (2021). Associations between physical or psychosocial risk factors and work-related musculoskeletal disorders in construction workers

based on literature in the last 20 years: A systematic review. *International Journal of Industrial Ergonomics*, 83, 103113.

- 2. Marsela, V., Subadiyono, S., & Suhendi, D. (2021). Learners and Teacher Toward The Problem-Solving Based Learning Media. *Journal of Education Technology*, *5*(4), 556-562.
- 3.Suparno, S., Wena, M., Sugandi, M., & Pribadi, P. (2019, January). The effectiveness of Activity-Based Learning to Improve Students' Self-Directedness in Learning. In *2nd International Conference on Vocational Education and Training (ICOVET 2018)* (pp. 30-35).
- 4. Ali, A., Zafar, H., Zia, M., ul Haq, I., Phull, A. R., Ali, J. S., & Hussain, A. (2016). Synthesis, characterization, applications, and challenges of iron oxide nanoparticles. *Nanotechnology, science and applications*, 49-67.
- 5. Hansraj, S. (2017). Generalized spheroidal space times in 5-d Einstein–Maxwell–Gauss–Bonnet gravity. *The European Physical Journal C*, 77, 1-12.
- 6.Panko, M., Kenley, R., Davies, K., Piggot-Irvine, E., Allen, B., Hede, J., & Harfield, T. (2005). Learning styles of those in the building and construction sector Building Research Association of New Zealand Inc.
- 7. Prince, M. (2004). Does active learning work? A review of the research. *Journal of engineering education*, *93*(3), 223-231.
- 8. Malik, M., Rafique, N., & Qayyum, A. (2020). Parental involvement at home and school at elementary level: Effect of occupation. *Journal of Elementary Education*, *30*(1), 159-178.
- 9. Broman, K. W., Wu, H., Sen, Ś., & Churchill, G. A. (2003). R/qtl: QTL mapping in experimental crosses. *bioinformatics*, 19(7), 889-890.
- 10. Hake, R. R. (1998). Interactive-engagement versus traditional methods: A six-thousand-student survey of mechanics test data for introductory physics courses. *American journal of Physics*, 66(1), 64-74.
- 11. Anwar, M. S., Choirudin, C., Ningsih, E. F., Dewi, T., & Maseleno, A. (2019). Developing an interactive mathematics multimedia learning based on ispring presenter in increasing students' interest in learning mathematics. *Al-Jabar: Jurnal Pendidikan Matematika*, 10(1), 135-150.
- 12. Singal, J., Haider, J., Ajello, M., Ballantyne, D. R., Bunn, E., Condon, J. ... & Xu, L. (2018). The radio synchrotron background: conference summary and report. *Publications of the Astronomical Society of the Pacific*, 130(985), 036001.
- 13. Rajabalee, B. Y., Santally, M. I., & Rennie, F. (2020). A study of the relationship between students' engagement and their academic performances in an eLearning environment. *E-learning and Digital Media*, *17*(1), 1-20.
- 14. Bakhru, S. A., & Mehta, R. P. (2020). Assignment and project activity based learning systems as an alternative to continuous internal assessment. *Procedia Computer Science*, *172*, 397-405.
- 15. Zhou, R. L., & Luh, D. B. (2021, June). Activity Design of Nature Experience Teaching. In *International Conference on Applied Human Factors and Ergonomics* (pp. 269-275). Cham: Springer International Publishing.

- 16. Stephen, O., Sain, M., Maduh, U. J., & Jeong, D. U. (2019). An efficient deep learning approach to pneumonia classification in healthcare. *Journal of healthcare engineering*, 2019(1), 4180949.
- 17. Azuka, B. F. (2013). Assessment in primary school mathematics classrooms in Nigeria.
- 18. Mehmood, K., & Kanwal, W. (2021). Implementation of activity based teaching at primary level: A theoretical perspective. *Pakistan Journal of Educational Research*, *4*(1).
- 19.Hall, D. C., Kellar, G. M., & Weinstein, L. B. (2016). The impact of an activity-based learning environment and grade point average on student final course grade in an undergraduate business statistics class. *Academy of Educational Leadership Journal*, 20(1), 50-64.