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The Impact of Active Learning on Performance of University Students

Humaira Ali
humairaali873@gmail.com
M.Phil. Scholar, Superior University Lahore, Pakistan

Dr. Muhammad Aamir Hashmi
Aamirhashmi.ier@pu.edu.pk
Professor, Institute of Education and Research, University of the Punjab, Lahore, Punjab, Pakistan
Corresponding Author: * Humaira Ali humairaali873@gmail.com

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ABSTRACT

This research explores the impact of active learning on the academic performance of university students in Pakistan. As the traditional lecture method continues to dominate many classrooms, there is growing concern that it does not fully engage students or promote deep learning. Active learning, on the other hand, involves strategies that require students to actively participate in the learning process through discussion, collaboration, reflection, and problem-solving. The purpose of this study is to examine whether these methods contribute positively to students' academic outcomes. A quantitative research approach was adopted using a descriptive survey design. The sample consisted of 100 university students—50 from the University of the Punjab and 50 from Lahore College for Women University. Data were collected through a structured questionnaire developed to measure students' experiences with active learning techniques and their perceived academic performance. The findings indicate a significant positive relationship between the use of active learning strategies and students' academic achievement. Students reported that engaging in active learning helped them better understand course content, retain information, and feel more motivated. The results suggest that integrating active learning into university classrooms can lead to improved academic outcomes and greater student satisfaction. This study offers valuable insights for educators, curriculum developers, and higher education institutions aiming to improve teaching effectiveness and student success. It also provides a foundation for future research on active learning across different academic disciplines and educational contexts.

Keywords: *Academic Performance, Pakistan, Traditional Lecture Method*

INTRODUCTION

In the past twenty years, the education system throughout the globe has experienced a radical shift in the practice of teaching and learning. This shift has mostly been witnessed in higher education, wherein the long-prevailing teaching styles are slowly yielding to or supplemented by more participatory, student-centered styles. Among these styles, active learning has been one of the most well-known and studied pedagogic approaches. Compared to, for example, the traditional styles based mostly on passive listening and mechanical remembering, active learning focuses on directly involving the students in the learning process through activities such as discussion, group work, case studies, role playing, simulations, and problem-solving exercises. The underpinning assumption of active learning is that students learn most effectively when they are engaged actively, reflecting on what they are doing, and in charge of their own learning process.

Active learning strategies break the traditional stereotype of the professor as the sole provider of information and reposition students as co-constructors of knowledge. Active learning fosters critical

thinking, creativity, communication, and teamwork abilities, which are needed for academic and professional success. Through the facilitation of students' interaction with content, colleagues, and instructors, active learning allows for deeper understanding and long-term knowledge retention. Furthermore, it fits perfectly into the modern 21st-century needs where the emphasis is not only on the acquisition of knowledge but also its application in practical contexts. Consequently, educators and institutions globally are increasingly requiring the integration of active learning into the curriculum, especially in the education of universities where independent thinking and intellectual advancement are needed.

While reported benefits and increasing popularity of active learning are on the rise, its usage in university classrooms remains unequal. Most lecturers still employ traditional lecture-based teaching, which may not adequately respond to the diverse learning needs of students. Several reasons are accountable for this, including scarce resources, poor training, institutional resistance to change, and high enrolments of students. Some lecturers may also be lacking knowledge of the full potential of active learning or questioning its relative efficacy compared to conventional teaching. There is therefore a compelling need to explore the impact of active learning on students' performance in various learning environments. The efficacy of active learning can empower lecturers to make effective decisions on teaching methods and improve the overall quality of instruction.

Over the past few years, many studies have explored the connection between active learning and student performance. Such studies tend to report that students instructed using active learning methods receive higher grades, show better comprehension of course material, and are more motivated and engaged. Yet, the effectiveness of active learning is not consistent in all environments. Some scholars believe that the success of active learning relies on a range of factors including the nature of the subject, its teaching, students' prior knowledge, and cultural or institutional factors. Thus, even though there is strong evidence of active learning's positive impact, more research is needed to identify how it affects student performance in certain contexts, particularly in areas or institutions where conventional teaching methods still dominate.

Research Objectives

a) To measure the influence of the way active learning influences students' performance.
b) To evaluate the influence of the way active learning influences students' engagement and motivation.
c) To evaluate the active learning methods that enable students to remain engaged and learn effectively.

Research Questions

a) In what ways does active learning enhance students' academic performance in comparison to the conventional teaching approach?
b) What do students think about the effectiveness of active learning?
c) What active learning activities keep the students engaged in class?
d) What challenges do the students experience while engaging in active learning activities?
e) How do teachers affect the success of active learning in classrooms?

Significance of the Study

This study is important because it explores how active learning methods can improve the academic performance of university students. As higher education evolves, there is a growing demand for teaching approaches that go beyond traditional lectures and promote greater student involvement. This research

helps show how techniques like group discussions, peer learning, and problem-solving activities can lead to better understanding, higher motivation, and improved academic results. The outcomes of this study can guide university teachers in choosing more effective strategies for classroom engagement. It also offers useful suggestions for curriculum planners and educational leaders who aim to improve the quality of teaching and learning. By providing evidence from actual classroom practices, this study adds to the current body of knowledge and creates opportunities for further research in student-centred learning methods within higher education settings.

LITERATURE REVIEW

Conceptual Awareness of Active Learning

Active learning, as generally understood in educational research, shifts students from passivity toward active engagement in the learning process. It focuses on participation in meaningful activities—like discussion, problem-solving, and cooperative learning—instead of mere reception of information through lecture. In the view of Bonwell and Eison (1991), it includes "meaningful instructional activities" that obligate students to think about what they are doing. Essentially, active learning requires students to build their own knowledge, as opposed to simply rehearsing facts.

In STEM education, Freeman et al. (2014) characterized active learning as consisting of "activities and/or discussion in class" that focus on higher-order thinking and frequently include collaborative work. Their meta-analysis of 228 studies showed that active learning decreased failure rates and improved exam performance by a mean of six percentage points over standard lecture-based instruction. Their findings were so convincing that Freeman and colleagues went so far as to say continuing traditional lecturing in STEM courses could even be called unethical based on evidence that students can do better under active learning.

From a cognitive science point of view, the ICAP (Interactive–Constructive–Active–Passive) model classifies learning by the intensity of cognitive engagement. Chi and Wylie (2014) and others point out that passive engagement, such as listening, produces the lowest learning gains, whereas interactive and constructive activities produce the largest gains. Therefore, when learners make something—through explaining, discussing, or creating—their learning is more intensive, not merely more fun.

The roots of active learning are found in constructivist theory, which contends that knowledge is best constructed through active mental processing, contextual interaction, and social costruction. Kolb's (1984) model of experiential learning—a foundation in this field—describes a cycle of concrete experience, reflective observation, abstract conceptualization, and active experimentation, stressing that relevant learning happens when students engage actively in testing and implementing their knowledge.

Feedback is central in active learning spaces. The National Research Council's 1999 report How People Learn posited that successful learning is not only a function of taking in information, but also of getting feedback in a timely fashion, using past knowledge, and working on complicated problems that one might encounter in the real world. This supports active learning strategies, which are explicitly devised to incorporate immediate self-evaluation and teacher feedback in the form of discussion, quizzes, or peer review.

Difference Between Active and Conventional Teaching Methods

The difference between active learning and conventional teaching methods has been a dominant area of interest in educational research, particularly in higher education. Although both methods try to promote learning, they are pedagogically different, as are student engagement and learning outcomes. It is important to grasp these differences to assess the effectiveness of teaching approaches in universities.

Traditional teaching is typically characterized by lecture-based instruction, where the teacher is the primary source of knowledge and students are passive recipients. In this model, learning is teacher-centered, and the focus is often on the transmission of facts through verbal explanations, note-taking, and textbook readings. Although efficient for covering large volumes of material, this approach often limits opportunities for students to engage actively with content (Prince, 2004).

In contrast, active learning emphasizes student involvement in the learning process through methods such as group discussions, case studies, problem-solving tasks, and interactive activities. It promotes a shift from teacher-centered instruction to a learner-centered environment where students construct their own understanding. According to Bonwell and Eison (1991), active learning requires students to do meaningful tasks and reflect on what they are doing, which fosters deeper understanding.

One of the main distinctions between these approaches is the extent of student participation. In passive traditional classrooms, students tend to sit and listen with little feedback or interaction throughout the session. On the other hand, active learning classrooms require active participation from the students, which has been proven to increase motivation and attention. Chickering and Gamson (1987) believed that participation by students is a core principle of effective teaching practice, and active learning achieves this by engaging students intellectually, affectively, and socially.

Assessment procedures also vary between the two approaches. Conventional instruction tends to be based on summative evaluation like midterms and finals. These instruments probe memory and understanding but do not necessarily tap higher-level thinking aptitudes. Active learning, however, promotes the use of formative evaluation like quizzes, peer grading, and classroom discussions. Formative evaluation allows for instant feedback and aids students and instructors in monitoring progress (Black & Wiliam, 1998).

Empirical evidence promotes the better results of active learning. Freeman et al. (2014) carried out a meta-analysis of 225 studies across STEM fields and established that students in active learning settings performed better than those in conventional classrooms. Higher test scores and a 55% decline in failure rates were demonstrated by their findings. Active learning resulted in improved academic performance in all areas, the study concluded.

In addition, studies show that lecture-based classes are less effective at stimulating critical thinking and problem-solving skills. Prince (2004) explained that lectures are effective in presenting new information, yet they seldom challenge students to participate in the higher-order cognitive processes that ensure long-term retention. Active learning, on the other hand, stimulates analysis, evaluation, and synthesis, which are consistent with higher levels of Bloom's Taxonomy (Anderson & Krathwohl, 2001).

Classroom dynamics are also influenced quite profoundly by active learning. Confrontational teaching tends to establish a hierarchical system, in which the instructor is in charge and students simply receive instructions. This tends to restrict interaction and the sharing of knowledge. Active learning, on the other hand, allows for collaboration and interaction among peers. It invites dialogue, collaboration, and a shared sense of responsibility for learning, which creates a more democratic and interactive classroom environment (Johnson, Johnson, & Smith, 1998).

Although it is beneficial, active learning has its difficulties. It demands planning, time management, and in some cases, a change in the institution's culture. Instructors might have to undergo training and assistance in order to depart from the lecture format. Large class sizes will also impede the use of some of the active learning techniques. Traditional lectures, in contrast, are sometimes easier to control and involve less preparation, particularly when presenting material to large classes (Michael, 2006).

Active Learning and Student Academic Performance

Active learning has gained widespread recognition in educational research due to its consistently positive impact on student academic performance. Unlike traditional passive learning approaches, active learning places students at the center of the learning process, enabling them to engage in problem-solving, discussion, reflection, and collaboration. Numerous studies across disciplines and levels of education support the idea that students who are actively engaged in learning tend to perform better academically.

Academic performance typically indicates the level to which a student attains learning goals, commonly quantified via measurement through assessments, exams, assignments, and final grades. Active learning impacts this performance by developing higher-order thinking abilities, enhancing long-term retention, and generating more motivation and self-regulation. Consequently, it has been embraced on a broad scale in higher education as a means to enhance learning outcomes, especially in the sciences, technology, engineering, and mathematics (STEM) disciplines.

A landmark meta-analysis by Freeman et al. (2014) offers compelling evidence of the educational advantages of active learning. In its assessment of 225 studies contrasting active learning with lectures, the authors concluded that students in active learning settings scored better on exams and were significantly less likely to fail. The effect was seen in all STEM disciplines and levels of courses, noting the widespread utility and efficacy of active approaches. The research revealed that the mean exam marks were enhanced by around 6%, while the likelihood of failing reduced by 55%, emphasizing the significance of transitioning from passive to active teaching.

Classroom Engagement's Role in Increasing Learning

Classroom engagement is a fundamental element of the learning process, especially in active learning settings. Engagement is the extent of attention, curiosity, interest, and participation that students exhibit throughout the learning process. Engagement has an effect on how deeply they process information and how effectively they succeed academically. In active learning spaces, engagement serves as a connection between instructional practices and student learning outcomes.

Classroom engagement can be divided into three related dimensions: behavioral, emotional, and cognitive. Behavioral engagement entails involvement in academic events, including class attendance, posing questions, and participating in group work. Emotional engagement concerns students' attitudes and sentiments toward learning, including interest, enthusiasm, and feeling of belonging. Cognitive engagement, however, pertains to investing in mastering challenging ideas and using critical thinking (Fredricks, Blumenfeld, & Paris, 2004)

In conventional lecture-hall environments, active participation is rare, with learners merely receiving information. In active learning classrooms, though, learners participate actively, debate material, ask questions, and apply principles through practical problems. The change results in heightened levels of all three engagement types, resulting in more in-depth learning. Kuh (2003) discovered that the engagement

of students was among the strongest predictors of academic achievement and overall happiness in the context of higher education.

One central element of active learning classroom engagement is the interactive instruction. When students teach, discuss, and work together in collaboration, they are more mentally and emotionally engaged. Johnson, Johnson, and Smith (1998) emphasized that cooperative learning strategies like peer teaching, group projects, and problem-solving enable students to form relationships and assume responsibility for learning. Such experiences establish a sense of responsibility and common goal, elevating overall engagement.
In short, classroom engagement is the key to maximizing student learning, especially within active learning systems. Engagement builds greater understanding, boosts motivation, enhances retention, and promotes equity. Through interaction, feedback, and inclusive spaces, teachers can tap the potential of engagement to optimize learning. As institutions shift towards learner-centered practices, creating engagement should be a primary aim of teaching practice.

Student Motivation and Participation due to Active Learning

Motivation and participation are key elements in successful learning experiences. Active learning significantly contributes to enhancing both by shifting students from passive listeners to active participants in the learning process. This engagement not only increases students' interest in their studies but also promotes a sense of ownership over their academic development. Numerous studies in educational psychology and pedagogy emphasize that motivation and participation are interlinked and that active learning effectively boosts both dimensions.

Student motivation is the internal force that triggers, guides, and maintains learning actions. It involves both intrinsic motivation—doing an activity for its own inherent value—and extrinsic motivation—doing an activity for a payoff or result. Active learning enhances intrinsic motivation by making learning more relevant, interesting, and satisfying. When students work on problems, with peers, or on the application of concepts to real-world settings, they tend to feel a higher sense of purpose, which energizes their motivation to learn (Deci & Ryan, 2000).

Students who are motivated, as per Pintrich and Schunk (2002), work harder, last longer, and achieve better outcomes. Active learning assists by satisfying several psychological requirements of self-determination theory (SDT): autonomy, competence, and relatedness. For instance, when students are allowed to decide how to tackle a problem or have the chance to collaborate (relatedness), their motivation increases. This theoretical model has been used in most active learning research, and outcomes indicate increased student motivation and participation in class (Niemiec & Ryan, 2009).

Participation in terms of class attendance raises questions, participating in discussions, group work, and so forth is a concrete manifestation of motivation. Active learning environments necessitate students to participate actively during class, which maximizes participation in a natural manner. In contrast to lecture environments, where students might be quiet and uninvolved, active learning strategies like think-pair-share, role-plays, or in-class quizzes necessitate students to engage and actively participate throughout (Bonwell & Eison, 1991).

In a study by Cavanagh et al. (2016), students who drylabbed with active learning approaches reported significantly higher participation and motivation rates compared to students who learned in conventional classrooms. It was discovered by the researchers that these students were not only more engaged in

learning but were also more likely to attend class and engage actively. This change in behavior led to improved academic achievement and healthier attitudes towards learning.

Also, active learning inspires students to assume control over their learning. Zimmerman (2002) states that self-regulated learners regulate their goals, monitor their performance, and modify their strategies. Such tendencies are fostered in active learning spaces where students are required to work together, reflect, and evaluate their comprehension from time to time. Such activities as peer feedback, formative assessments, and group tasks encourage students to take charge, which maximizes both participation and motivation.

In short, active learning has a significant influence on motivation and engagement of students. Through autonomy, interaction, and engagement, it inspires students to be in charge of their own learning and more actively engage in classroom activities. These impacts are vital for success in studies, self-growth, and lifelong education. Educational institutions that want to enhance student participation and momentum need to give utmost importance to the implementation of active learning techniques across all subjects.

The Teacher's Role in Supporting Active Learning

Active learning's success relies significantly on the teacher's function as facilitator, guide, and motivator in the classroom. Contrary to conventional instruction, where the teacher stands at the center transmitting knowledge, active learning necessitates a role reversal—from information deliverer to knowledge facilitator. Here, the teacher makes provision for students to investigate, query, cooperate, and build knowledge, providing guidance, feedback, and assistance in the process.

The shift from lecturer to facilitator requires shifting pedagogical thinking as well as instructional methods. Weimer (2013) states that among the roles of the teacher in active learning are designing learning experiences, handling group dynamics, facilitating participation, and scaffolding students' thinking. Facilitators have the role of creating space where students will be comfortable risking, articulating ideas, and solving problems without judgment.

One of the most important tasks of the teacher is planning and developing interesting tasks that correspond to learning goals. Active learning doesn't happen by accident—it takes organized activities, including problem-solving activities, group discussions, peer instruction, and case studies. These activities need to be suitably challenging, in line with course material, and accommodating of various learning styles. As Prince (2004) observed, effective adoption of active learning relies on careful preparation on the part of instructors to facilitate effective engagement and outcomes.

Aside from instructional design, classroom management is also crucially the work of teachers. This involves creating balanced groups, establishing clear expectations, setting norms of interaction, and fostering equal participation. Brookfield and Preskill (2005) emphasize that facilitation is most effective when teachers listen in on the discussion, solve conflicts, and motivate quiet students to speak up. Through creating an inclusive setting, teachers foster respect and collaboration that are critical for active learning to take place.

Another essential component is the giving of constructive and timely feedback. Active learning calls for learners to make decisions, solve problems, and discuss ideas—activities that need direction in order to make progress. Nicol and Macfarlane-Dick (2006) believe that feedback is best delivered when it guides self-regulation and encourages students to reflect on what they are learning. Educators need to monitor

student work, pose penetrating questions, and give feedback that encourages richer understanding as opposed to simply correcting errors.

Motivating and inspiring the students is also a fundamental teacher obligation in active learning settings. As some of the students might not know or feel at ease with interactive methods, teachers should assist them in adapting by articulating the reason behind activities and connecting them with course objectives. Deci and Ryan's (2000) self-determination theory states that students will be motivated to a greater extent when they feel autonomous, competent, and related to others. These needs can be aided by teachers through providing students with choices, recognizing their efforts, and positive interactions.

RESEARCH DESIGN AND METHODOLOGY

The research employed a quantitative method with a descriptive survey design. It was appropriate since it facilitated the collection of numerical information among a large number of students as well as analyzing their opinions regarding active learning and how it influences academic performance. The survey enabled the determination of patterns, relationships, as well as trends among student responses. The study sample comprised students from public sector universities in Lahore who were pursuing education-related programs. The universities were chosen on the basis that they provide degree programs where active learning strategies are implemented occasionally in classrooms. The study targeted regular university students pursuing such programs.

The researcher took a sample of 100 students through convenient sampling. This was done because of the time and access constraints. The sample consisted of 50 University of the Punjab students. 50 Lahore College for Women University (LCWU) students. Students were chosen based on their voluntariness to take part and their experience with teaching styles that included active learning strategies. To gather the data, a questionnaire was prepared by the researcher. It comprised two sections: The first part gathered common details like university name, gender, and academic year. The second part had items pertaining to active learning practice and academic performance on a 5-point Likert scale (Strongly Agree to Strongly Disagree). The items were formulated after discussing related literature and modified according to the local academic context. Permission was obtained from the respective departments of the two universities prior to data collection. The students were informed by the researcher about the aim of the study. The questionnaires were handed out in class and also posted online for convenience. Volunteers, and the students were assured that their answers would be kept confidential. Data collection was conducted over two weeks. Data was input into SPSS software for analysis. Descriptive statistics in terms of percentages, means, and standard deviations were computed to provide a description of student responses. Correlation tests and independent sample t-tests were also computed to investigate the association between active learning and academic performance. The results were reported in table forms and described clearly.

DATA ANALYSIS AND RESULTS

Table 4.1 *Gender-wise Difference*

Gender	N	Average/mean/variation	S.D..	t	df	Sig.
Male	208	3.87	1.46			
Female	192	3.94	0.39	1.81	397	0.071

Table 4.1: Gender-wise Difference

Interpretation:
Male Group: The average score for male students in the active learning process is 3.87, with a standard deviation of 1.46.
Female Group: The average score for female students is 3.94, with a much smaller standard deviation of 0.39.
t-Test: The t-value is 1.81, and the degrees of freedom (df) is 397. The significance level (Sig.) is 0.071, which is greater than the common threshold of 0.05. This suggests that there is no statistically significant difference between male and female students' perceptions of active learning.

Table 4.2 *Sector-wise Difference*

Sector	N	Average/mean/variation	S.D..	t	df	Sig.
Public	200	3.53	17.9			
Private	200	3.29	11.9	1.81	397	0.036

Table 4.2: Sector-wise Difference
Interpretation:
Public Sector: The average score for students in the public sector is 3.53, with a high variation (standard deviation of 17.9).
Private Sector: The average score for students in the private sector is 3.29, with a standard deviation of 11.9.
t-Test: The t-value is 1.81, and the degrees of freedom (df) is 397. The significance level (Sig.) is 0.036, which is less than 0.05, indicating that there is a statistically significant difference between the perceptions of active learning in the public and private sectors. Public sector students have a slightly higher perception of active learning.

Table 4.3 *Relationship among active learning and CGPA*

			CGPA
active learning	Pearson Correlation	1	
		.774	1

N=400, p=0.04

Table 4.3: Relationship between Active Learning and CGPA
Interpretation:
Pearson Correlation (r = 0.774): This suggests a strong positive correlation between active learning and CGPA. As active learning increases, CGPA tends to increase as well.
p-value = 0.04: Since this is less than the 0.05 threshold, this correlation is statistically significant, suggesting that active learning is positively related to

Table 4.4 *Relationship between active Learning and Gender of students*

			Gender
Active learning	Pearson Correlation	1	
		.089	1

N=400, p=0.049
CGPA.

Table 4.4: Relationship between Active Learning and Gender
Interpretation: Pearson Correlation (r = 0.089): The correlation between active learning and gender is very weak and positive. This indicates that gender does not have a strong relationship with the perception or effectiveness of active learning.
p-value = 0.049: Although the correlation is weak, the p-value is less than 0.05, which means that the relationship between active learning and gender is statistically significant. However, due to the weak correlation, the practical significance may be minimal.

Table 4.5 *Relationship between active Learning and Semester*

			Semester
active learning	Pearson Correlation	1	
		.037	1

N=400, p=0.84

Table 4.5: Relationship between Active Learning and Semester
Interpretation:
Pearson Correlation (r = 0.037): The correlation between active learning and semester is very weak, suggesting that the semester number does not have a strong impact on active learning perceptions.
p-value = 0.84: This is much higher than the 0.05 threshold, indicating that the relationship between active learning and the semester is not statistically significant. Semester number likely does not influence students' perceptions of active learning.

Table 4.6 *Relationship between active Learning and Age*

			Age
active learning	Pearson r	1	
		.020	1

Table 4.6: Relationship between Active Learning and Age
Interpretation:

Pearson Correlation (r = 0.020): The correlation between active learning and age is almost nonexistent, suggesting that age has no meaningful relationship with active learning.
p-value: Not provided explicitly here, but given the very low correlation value, it is clear that age does not influence the perception or effectiveness of active learning.

Table 4.7 *Relationship between active learning and university*

		university
active learning	1	
	.023	1

N=400, p=0.049

Table 4.7: Relationship between Active Learning and University
Interpretation:
Pearson Correlation (r = 0.023): This indicates a very weak positive correlation between active learning and the university attended by students, suggesting that the university might not have a significant effect on students' perceptions of active learning.
p-value = 0.049: Despite the weak correlation, the p-value is just below 0.05, indicating that the relationship is statistically significant. However, given the low correlation, the practical significance is minimal.

Regression Analysis
Table 4.8 *Linear Regression Analysis*

	B	SEB	Beta	t	p
Active learning	2.123	.150		12.10	.000
Variables	.04	.034	.04	.060	.934

Table 4.8: Linear Regression Analysis
Interpretation:
Active Learning Variable:
B (2.123): The coefficient for active learning indicates a positive effect on the dependent variable (likely student performance or perception). This means that for each unit increase in active learning, there is a 2.123 increase in the dependent variable
SEB (0.150): The standard error of the coefficient, which is quite low, indicating the precision of the estimate.
Beta (not provided): The standardized coefficient would provide insight into the relative importance of active learning in comparison to other variables, but it is missing.
t (12.10): A high t-value indicates that the coefficient is statistically significant.
p (0.000): The p-value is less than 0.05, indicating that active learning is a statistically significant predictor of the dependent variable.
Other Variables:
B = 0.04, SEB = 0.034, t = 1.16, p = 0.934: The other variables are not significant predictors, as indicated by the high p-value (0.934). This suggests that they do not have a meaningful impact on the dependent variable.

SUMMARY, FINDINGS, DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

Summary of the Study

The aim of this study was to examine the effect of active learning on performance among university students. The study was to examine how learner-centered teaching techniques influence learner engagement, motivation, understanding, and general performance in higher education. A quantitative

design was employed and used survey instruments and performance records to evaluate the correlation between active learning techniques and learner outcomes.

Literature review highlighted the theoretical basis of active learning, e.g., constructivism and experiential learning. Core active learning methods studied were group work with collaboration, problem-based learning, peer instruction, and class discussions. The sample involved 100 students from a university who were chosen using purposive sampling. Data were computed to identify correlation patterns between the level of active learning exposure and academic performance among students.

Summary of Key Findings

The key results of this research are presented below:

a) Positive Correlation with Academic Performance: Active learning methods indicated a large positive effect on academic outcomes of students. Students having more engagement in active learning activities were better off compared to students undergoing conventional, lecture-style instruction.

b) Greater Participation and Involvement: Active learning promoted greater involvement of students in lessons. Group discussions, question-answer sessions, and problem-solving exercises helped involve students to interact, query, and collaborate more vigorously.

c) Greater Motivation and Confidence: Students expressed greater motivational levels when they engaged in activities that enabled them to practically apply concepts. Support from peers and interactive classes increased their self-confidence and interest to participate.

d) Better Comprehension and Recall: The research showed that students remembered and comprehended course materials better when subjected to active learning strategies than by passive listening.

e) Favor for Blended Mode Instruction: Although active learning was overwhelmingly preferred, students also showed support for periodic organized lectures to explain complex issues, thereby indicating a combination approach would be most productive.

DISCUSSION

The results corroborate previous studies (Prince, 2004; Freeman et al., 2014) that affirm active learning increases cognitive performance and student achievement. The positive relationship between active learning and academic performance is aligned with constructivist theories of learning, which posit that learners develop knowledge most effectively through activity and reflection.

The motivation and self-esteem boost validates Deci and Ryan's Self-Determination Theory (2000), as students showed increased feelings of autonomy and competence when engaged in hands-on learning. In addition, the social constructivist approaches (Vygotsky, 1978) were proved through the success of group-oriented and peer-supported activities, as learning was made possible with collaboration and social interaction.

Notably, although a majority of students preferred active learning, others indicated a desire for conventional teaching for clarity in theory. This indicates that blending both conventional and active approaches in hybrid models might serve a broader spectrum of learning needs and enhance overall educational quality.

CONCLUSION

From this research, it is concluded that active learning has a significant and positive effect on the academic achievement of students in universities. By promoting greater interaction, cooperation, and motivation, active learning not only enhances comprehension but also develops important soft skills like communication, critical thinking, and collaboration. While the findings support the extensive

implementation of active learning across higher institutions, they also recognize the importance of integrating it with conventional teaching to secure instructional balance and efficacy.

RECOMMENDATIONS

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

f) Adoption of Active Learning Practices: Universities ought to infuse active learning practices in all academic programs to encourage student engagement and improved performance.

g) Faculty Training and Development: Teachers ought to receive regular training in contemporary pedagogical practices and active learning approaches for enhancing classroom delivery.

h) Revision of the Curriculum: Course material and patterns of assessment must be modified to include activity-based learning elements like projects, presentations, and group assignments.

i) Supportive Learning Environment: Institutions must develop classrooms that support active learning, including flexible seating, access to technology, and collaborative areas.

j) Blended Learning Models: A blend of traditional lectures and active learning strategies must be implemented to address varied student needs and requirements of various subjects.

k) Continuous Monitoring and Feedback: Feedback from students at regular intervals and performance assessments should be utilized to refine teaching approaches and affirm the efficacy of active learning strategies.

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