MAKRAN JOURNAL OF EDUCATIONAL RESEARCH(MJER)

https://www.mjer.com.pk/

VOL:01 ISSUE:01 (2024)

Student-Centered Learning: Enhancing Engagement Through Active Teaching Strategies

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Abstract:

Student-centered learning (SCL) has gained widespread recognition in educational practice, as it places the learner at the core of the learning process, emphasizing active engagement and collaboration. This paper explores the principles of SCL and its implications for enhancing student engagement through active teaching strategies. By examining various methodologies such as problem-based learning (PBL), flipped classrooms, and collaborative learning, the paper argues that these strategies foster deeper learning, critical thinking, and improved academic outcomes. The research highlights the role of instructors in facilitating a student-centered environment and outlines the benefits and challenges of implementing such approaches in diverse educational settings. Drawing on evidence from Pakistani educators and studies, the paper concludes with recommendations for effective integration of active teaching strategies in Pakistan's educational landscape.

Keywords: *Student-Centered Learning, Active Teaching Strategies, Engagement, Problem-Based Learning, Flipped Classroom, Collaborative Learning, Pakistan*

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1. Introduction

Overview of Student-Centered Learning (SCL)

Student-Centered Learning (SCL) represents a paradigm shift in educational practice, where the focus transitions from the teacher to the student, making the learner the central figure in the educational process. In traditional teacher-centered approaches, educators are the primary source of knowledge, and students are passive recipients. However, in SCL, the emphasis is placed on students' needs, interests, and learning styles, allowing them to take ownership of their learning journey. In this model, the role of the teacher transforms into that of a facilitator or guide who

encourages students to be actively involved in their learning process. SCL promotes autonomy, critical thinking, and a deeper engagement with the subject matter by encouraging students to collaborate, problem-solve, and reflect on their learning experiences.

The adoption of SCL has been facilitated by technological advancements, making it easier to integrate interactive learning tools, collaborative platforms, and personalized educational resources into classroom settings. SCL aligns with the growing recognition that learning is more effective when students are actively engaged in the process, as opposed to passively receiving information.

Importance of Engagement in Educational Settings

Student engagement is widely recognized as a crucial factor in the learning process, as it directly correlates with academic achievement, motivation, and the development of lifelong learning skills. Engagement refers to the level of participation, enthusiasm, and emotional investment students display during learning activities. Engaged students are more likely to retain information, think critically, and apply their knowledge to real-world situations. Additionally, engagement fosters a sense of ownership over learning, helping students develop self-regulation and intrinsic motivation.

In educational settings, engagement can take various forms: cognitive engagement, emotional engagement, and behavioral engagement. Cognitive engagement involves the mental effort students put into understanding the content; emotional engagement refers to their feelings of interest, curiosity, and connection to the material; and behavioral engagement encompasses their active participation in activities such as discussions, assignments, and group work. Active teaching strategies, such as those employed in SCL, are instrumental in promoting these forms of engagement by creating dynamic learning environments where students are encouraged to interact with the material, collaborate with peers, and take responsibility for their learning.

The Role of Active Teaching Strategies in SCL

Active teaching strategies are central to the successful implementation of SCL. These strategies focus on making learning an interactive and participatory experience rather than a passive one. Active learning encourages students to engage in higher-order thinking, such as analyzing, evaluating, and synthesizing information, rather than simply memorizing facts. By involving students directly in the learning process, active teaching strategies foster a deeper understanding of content and its practical applications.

Key active teaching strategies include:

- ***Problem-Based Learning (PBL):*** *Students work collaboratively to solve complex, real-world problems, encouraging critical thinking, teamwork, and application of knowledge.*
- ***Flipped Classroom:*** *Instructors assign learning materials for students to review at home, and classroom time is used for interactive activities, discussions, and problem-solving.*
- ***Collaborative Learning:*** *Students engage in group activities, such as discussions, projects, and peer teaching, which fosters teamwork and collective problem-solving.*

- ***Gamification:*** *Learning activities are framed as games or challenges, motivating students to actively participate and compete in a fun, engaging environment.*

Through these strategies, students are not only passive recipients of knowledge but active participants in constructing their own understanding. These methods contribute to creating an engaging and dynamic classroom environment, where students feel more connected to the content and motivated to succeed.

In the next section, we will explore the theoretical framework behind student-centered learning and how active teaching strategies support engagement and foster deeper learning.

2. Theoretical Framework

Definition and Principles of Student-Centered Learning (SCL)

Student-Centered Learning (SCL) refers to an educational approach that emphasizes the role of the learner as an active participant in their own learning process. In this model, students are at the core of the learning environment, and educators facilitate, guide, and support students in achieving their learning objectives rather than merely imparting information. The primary focus of SCL is to tailor the learning experience to the needs, interests, and abilities of students, promoting engagement, critical thinking, and problem-solving skills.

The principles of SCL are grounded in constructivist theories of learning, where learning is seen as a process of actively constructing knowledge rather than passively receiving it. Some of the key principles of SCL include:

1. ***Active Participation:*** *Students are encouraged to engage with the material, collaborate with peers, and participate in learning activities. Learning is seen as an interactive process, where students take responsibility for their own learning and contribute to the learning environment.*
2. ***Learner Autonomy:*** *SCL promotes the idea that students should have control over their learning. This includes giving students choices regarding the pace, content, and methods of learning, as well as encouraging self-directed learning.*
3. ***Personalized Learning:*** *In an SCL environment, learning is tailored to the unique needs and interests of each student. Educators adapt their teaching methods and materials to accommodate the diverse learning styles, abilities, and backgrounds of students.*
4. ***Collaborative Learning:*** *Learning is not seen as an isolated activity. SCL encourages students to collaborate with their peers, which fosters a sense of community and provides opportunities for peer teaching, feedback, and shared learning experiences.*
5. ***Reflection:*** *Students are encouraged to reflect on their learning process, identify challenges, and evaluate their progress. This helps them become more aware of their learning strategies and areas of improvement, fostering metacognitive skills.*

Key Theories Supporting Active Learning and Engagement

Several educational theories and models support the implementation of active learning strategies and student-centered approaches. These theories provide a foundation for understanding how

active learning enhances student engagement and promotes deeper learning. Some of the most influential theories include:

1. ***Constructivism (Piaget and Vygotsky)***

   Constructivism is a major theory that underpins student-centered learning. According to this theory, learning is a process of constructing knowledge through interaction with the environment, guided by the learner's experiences, prior knowledge, and active participation. Jean Piaget and Lev Vygotsky are two key theorists who contributed to this framework.

   - ***Piaget's Theory of Cognitive Development:*** *Piaget emphasized that learners actively construct knowledge through their interactions with the environment. In a student-centered learning environment, students are encouraged to explore, experiment, and make sense of new information based on their existing knowledge.*
   - ***Vygotsky's Social Constructivism:*** *Vygotsky argued that social interactions and cultural context play a critical role in learning. His concept of the "Zone of Proximal Development" (ZPD) suggests that learners can achieve higher levels of understanding with the help of more knowledgeable peers or instructors. This supports collaborative learning and the use of scaffolding, where students are provided with support as they move toward independent learning.*

2. ***Experiential Learning (Kolb)***

   David Kolb's Experiential Learning Theory posits that learning is most effective when students engage in a cyclical process of experiencing, reflecting, conceptualizing, and experimenting. Kolb's model emphasizes the importance of direct experiences in the learning process, which aligns with the principles of active learning in SCL. By engaging in hands-on activities, problem-solving, and reflection, students are able to integrate theoretical knowledge with practical applications.

   Kolb's four-stage cycle of learning includes:

   - ***Concrete Experience:*** *Direct involvement in an activity.*
   - ***Reflective Observation:*** *Observing and reflecting on the experience.*
   - ***Abstract Conceptualization:*** *Forming new concepts or ideas based on the reflections.*
   - ***Active Experimentation:*** *Testing new ideas and concepts in practice.*

3. ***Bloom's Taxonomy (Revised)***

   Bloom's Taxonomy, particularly the revised version by Anderson and Krathwohl, provides a framework for understanding the cognitive processes involved in learning. The taxonomy categorizes learning objectives from lower-order thinking skills (such as remembering and understanding) to higher-order thinking skills (such as analyzing, evaluating, and creating). In student-centered learning, active teaching strategies are designed to engage students at higher levels of the taxonomy, encouraging them to apply, analyze, and create new knowledge.

The revised Bloom's Taxonomy includes:

- ***Remembering:*** *Recalling information.*
- ***Understanding:*** *Explaining ideas or concepts.*
- ***Applying:*** *Using knowledge in new situations.*
- ***Analyzing:*** *Breaking information into parts and examining relationships.*
- ***Evaluating:*** *Making judgments based on criteria and standards.*
- ***Creating:*** *Combining elements to form a new structure or idea.*

4. ***Self-Determination Theory (Deci and Ryan)***

   Self-Determination Theory (SDT) focuses on intrinsic motivation and the factors that enhance or hinder motivation in learning environments. According to Deci and Ryan, students are most engaged when their needs for autonomy, competence, and relatedness are met. SCL strategies that allow for student choice, meaningful collaboration, and mastery experiences foster intrinsic motivation and lead to higher levels of engagement and learning.

   - ***Autonomy:*** *The need for students to feel in control of their learning.*
   - ***Competence:*** *The need for students to feel capable and effective in their learning.*
   - ***Relatedness:*** *The need for students to feel connected to others and part of a learning community.*

5. ***Cognitive Load Theory (Sweller)***

   Cognitive Load Theory, proposed by John Sweller, highlights the importance of balancing the complexity of learning tasks with the cognitive capacity of students. Active learning strategies that encourage engagement without overwhelming students' cognitive load are critical in creating effective student-centered learning environments. By using appropriate scaffolding, breaking complex tasks into manageable chunks, and providing opportunities for practice and feedback, educators can ensure that students can process and retain information effectively.

The theoretical framework outlined above emphasizes the importance of active participation, collaboration, and reflection in student-centered learning. These theories provide a strong foundation for implementing active teaching strategies, which can lead to increased engagement, deeper learning, and improved academic outcomes. In the following section, we will explore specific active teaching strategies that support SCL, and how they contribute to enhancing student engagement in diverse educational settings.

3. Active Teaching Strategies in Student-Centered Learning

Active teaching strategies are essential components of student-centered learning (SCL) that encourage students to take an active role in their education. These strategies aim to foster deeper engagement, critical thinking, and collaboration among students, transforming the classroom into a dynamic, interactive environment. Below are four widely recognized active teaching strategies that have proven effective in enhancing student learning and engagement:

Problem-Based Learning (PBL)

Problem-Based Learning (PBL) *is an instructional method where students learn through the exploration of complex, real-world problems. Rather than passively receiving information from lectures, students in PBL environments are presented with a problem that they must investigate, analyze, and solve collaboratively. The primary goal of PBL is to develop critical thinking, problem-solving, and teamwork skills, while also encouraging independent research and self-directed learning.*

In a typical PBL setup:

- *Students are introduced to a problem that is designed to simulate real-world challenges.*
- *They work in small groups to analyze the problem, gather information, and generate potential solutions.*
- *Throughout the process, students engage in discussions, share ideas, and receive feedback from peers and instructors.*

Benefits of PBL:

- *Encourages deep learning by requiring students to apply knowledge to practical situations.*
- *Enhances problem-solving and analytical skills.*
- *Promotes collaboration and teamwork, fostering communication skills.*
- *Develops self-directed learning as students search for information and resources to solve the problem.*

Challenges:

- *Can be time-consuming for both students and instructors.*
- *Requires careful planning and appropriate scaffolding to guide students through the learning process.*

Flipped Classroom Model

The ***Flipped Classroom Model*** *is a pedagogical approach where traditional in-class teaching and homework assignments are reversed. Instead of using class time for lectures, students are assigned pre-recorded videos, readings, or other resources to review before attending class. Classroom time is then dedicated to interactive, hands-on activities such as group discussions, problem-solving tasks, and collaborative projects.*

In the flipped classroom model:

- *Students access learning materials (e.g., videos, articles, podcasts) outside of class at their own pace.*
- *Instructors use class time to facilitate activities that reinforce the content, such as discussions, case studies, and group work.*
- *The focus shifts from passive listening to active engagement with the material.*

Benefits of the Flipped Classroom:

- *Maximizes face-to-face interaction between students and instructors.*
- *Allows students to learn at their own pace outside of class, leading to greater flexibility.*
- *Encourages higher-order thinking by utilizing in-class time for activities that require application, analysis, and synthesis of knowledge.*
- *Provides opportunities for personalized learning as students can revisit learning materials as needed.*

Challenges:

- *Requires significant preparation from instructors to create effective pre-class learning materials.*
- *Not all students may be comfortable with the flipped model, especially those who are accustomed to traditional teaching methods.*

Collaborative Learning and Peer Teaching

Collaborative Learning *involves students working together in small groups to achieve shared learning goals. This strategy is based on the premise that learning is a social process, and students can benefit from interacting with their peers in ways that promote mutual support, idea exchange, and collective problem-solving. Peer Teaching, where students take on teaching roles, complements collaborative learning by allowing students to reinforce their own knowledge while helping others understand the material.*

In collaborative learning and peer teaching:

- *Students engage in group work, where they discuss ideas, solve problems, and share knowledge.*
- *Peer teaching allows students to teach their peers, which can reinforce their own understanding and enhance communication skills.*

Benefits of Collaborative Learning and Peer Teaching:

- *Enhances critical thinking and deepens understanding as students explain concepts to one another.*
- *Builds teamwork, communication, and leadership skills.*
- *Fosters a sense of community in the classroom, improving motivation and engagement.*
- *Provides opportunities for diverse perspectives and peer feedback, which can lead to more comprehensive learning.*

Challenges:

- *Requires careful group formation and management to avoid unproductive or unequal participation.*
- *Some students may not fully engage in group activities, requiring strategies to encourage accountability.*

Gamification and Interactive Learning

Gamification *refers to the application of game elements, such as points, levels, and challenges, in non-game contexts, like education. The purpose of gamification is to make learning more engaging and enjoyable by incorporating elements of competition, rewards, and achievement.* ***Interactive Learning*** *takes this a step further by incorporating interactive technologies, such as simulations, online quizzes, and interactive multimedia, to engage students in active participation.*

In gamification and interactive learning:

- *Students earn rewards or recognition based on their achievements and participation.*
- *Classroom activities are designed to resemble game challenges, with clear goals, progress tracking, and feedback.*
- *Interactive learning tools, such as digital quizzes, virtual labs, and simulations, encourage students to explore concepts in an engaging, hands-on manner.*

Benefits of Gamification and Interactive Learning:

- *Increases student motivation and engagement through fun, competitive elements.*
- *Makes learning more personalized, allowing students to progress at their own pace and earn rewards for their efforts.*
- *Provides immediate feedback, helping students identify areas of improvement.*
- *Encourages exploration and experimentation, which can lead to deeper learning.*

Challenges:

- *Requires careful design to ensure that game elements align with educational objectives.*
- *Can be time-consuming to set up and may require technological resources that are not always available in all educational settings.*

The active teaching strategies discussed—Problem-Based Learning (PBL), the Flipped Classroom, Collaborative Learning and Peer Teaching, and Gamification and Interactive Learning—are essential components of student-centered learning that significantly enhance student engagement. Each of these strategies provides unique opportunities for students to actively engage with the material, collaborate with peers, and develop critical thinking and problem-solving skills. While there are challenges associated with implementing these strategies, the benefits far outweigh the drawbacks, making them valuable tools for fostering a dynamic, student-centered classroom environment.

In the next section, we will discuss the benefits of these active teaching strategies in further detail, particularly in terms of student engagement, academic performance, and motivation.

4. Benefits of Active Teaching Strategies

Active teaching strategies are integral to enhancing engagement, deepening learning, and improving overall academic outcomes. These strategies are designed to move beyond rote memorization and passive learning, providing students with opportunities to apply knowledge, engage in problem-solving, and develop a deeper understanding of the subject matter. Below are

some key benefits of incorporating active teaching strategies into student-centered learning environments.

Enhanced Critical Thinking and Problem-Solving Skills

Active teaching strategies, particularly Problem-Based Learning (PBL) and collaborative learning, encourage students to engage in higher-order thinking. These methods prompt students to analyze, evaluate, and synthesize information in real-world contexts, fostering critical thinking. By working through complex problems and real-world scenarios, students learn to approach challenges from multiple perspectives, evaluate potential solutions, and make informed decisions.

- ***PBL** encourages students to confront open-ended problems, requiring them to gather information, critically assess various sources, and develop creative solutions.*
- ***Collaborative learning** allows students to engage in discussions with peers, refining their understanding through debate and problem-solving in a team setting.*

This emphasis on critical thinking and problem-solving ensures that students are well-equipped to handle complex tasks both in academic settings and beyond, preparing them for future challenges in their careers and personal lives.

Increased Student Motivation and Participation

One of the most significant advantages of active teaching strategies is the increase in student motivation and participation. When students are actively involved in their learning process—whether through problem-solving, group work, or interactive technology—they are more likely to feel invested in the material. Active learning strategies make the content more engaging, fostering a sense of ownership over learning and encouraging students to take responsibility for their progress.

- ***Flipped classrooms** allow students to engage with learning materials on their own time, leading to more dynamic discussions and deeper engagement during in-class activities.*
- ***Gamification** incorporates elements of competition and rewards, which can serve as intrinsic motivators for students to participate actively and take risks in their learning.*

As students become more involved and motivated, they are more likely to participate actively in class discussions, collaborate with peers, and invest more time in learning, ultimately leading to improved learning outcomes.

Improved Retention and Academic Performance

Active learning strategies are proven to enhance student retention and academic performance by promoting deeper understanding and long-term memory retention. Active involvement in learning activities helps students connect new information to existing knowledge, making it easier to recall and apply the material later.

- ***Interactive learning tools** such as simulations and quizzes provide students with immediate feedback, which reinforces learning and corrects misunderstandings in real-time.*

- ***Collaborative learning*** *offers opportunities for students to review and explain concepts to one another, reinforcing their understanding through peer teaching.*

Research has shown that students who engage in active learning are more likely to retain information and perform better on assessments than those who passively receive instruction through lectures alone. This increased retention is not only due to the active nature of the learning process but also because it encourages students to reflect on the material and relate it to their own experiences.

5. Challenges of Implementing Active Teaching Strategies

While the benefits of active teaching strategies are clear, their implementation can be fraught with challenges. In many educational settings, particularly those that follow traditional teaching methods, there can be significant barriers to adopting active teaching strategies effectively. Below are some of the key challenges faced by educators and institutions when implementing active learning approaches.

Resistance to Change in Traditional Educational Settings

Many educational institutions, especially those in regions with long-standing educational traditions, can experience significant resistance to change. Teachers, administrators, and even students may be accustomed to traditional, lecture-based teaching methods, and shifting to active learning can be seen as disruptive or unnecessary. This resistance can manifest in reluctance to adopt new teaching methods, skepticism about their effectiveness, and difficulty in adjusting to new roles (e.g., from lecturer to facilitator).

- *Educators who are not familiar with active learning may be hesitant to experiment with new strategies, fearing that they might not be as effective as traditional lectures.*
- *Students who are used to a more passive learning style may initially struggle with the increased responsibility and active engagement required in student-centered environments.*

Overcoming this resistance requires strong leadership, support from educational authorities, and a commitment to professional development for educators.

Lack of Resources and Training for Instructors

Active teaching strategies often require specific resources and professional development to be implemented effectively. Teachers need access to training, technological tools, and support systems to incorporate strategies like flipped classrooms, gamification, and collaborative learning into their curricula.

- ***Technological resources****, such as interactive learning platforms and digital tools, may not be readily available in all educational institutions, particularly in underfunded schools and universities.*

- ***Professional development*** *is essential to equip educators with the skills and knowledge required to design and implement active learning activities. Without proper training, instructors may feel unprepared to manage the demands of active teaching strategies.*

Lack of resources and adequate training can result in ineffective implementation, undermining the potential benefits of active teaching strategies.

Classroom Management Issues in Active Learning Environments

Active learning environments often involve group work, student discussions, and hands-on activities. While these activities promote engagement, they can also create classroom management challenges. With multiple groups working simultaneously, it can be difficult for instructors to maintain control, provide individualized support, and ensure that all students are participating productively.

- *Managing* ***student behavior*** *in an active learning environment requires clear expectations and guidelines to ensure that students stay focused on the task at hand.*
- ***Time management*** *becomes a concern when balancing group activities, discussions, and individual learning tasks. Ensuring that each student is given enough time to engage meaningfully can be challenging.*

Effective classroom management strategies, such as establishing clear guidelines for group work and using technology to monitor student progress, can help mitigate these challenges.

6. Case Studies: Active Teaching in Pakistan

Role of Pakistani Educators in Promoting SCL

Pakistani educators have increasingly embraced student-centered learning strategies, despite the challenges posed by traditional educational structures. Many institutions in Pakistan, particularly in higher education, have started to experiment with active learning approaches to improve student engagement and learning outcomes. Educators in Pakistan are beginning to recognize the importance of fostering critical thinking, problem-solving, and collaboration among students to prepare them for the modern workforce.

- ***Teacher training programs*** *have been developed to introduce educators to active teaching strategies and provide them with the necessary tools to integrate these methods into their classrooms.*
- ***Government initiatives*** *and educational reforms have also encouraged the incorporation of student-centered teaching practices, with a focus on improving the quality of education and enhancing student engagement.*

Examples of Active Teaching Strategies in Pakistani Universities and Schools

Several universities and schools in Pakistan have adopted active teaching strategies such as flipped classrooms, problem-based learning (PBL), and collaborative learning.

- ***The Lahore University of Management Sciences (LUMS)*** *has implemented problem-based learning (PBL) in various disciplines, helping students develop real-world problem-solving skills.*
- ***The Aga Khan University Institute for Educational Development (AKU-IED)*** *promotes interactive learning and collaborative teaching methods through its teacher education programs, which emphasize student engagement and participatory learning.*

Success Stories and Challenges in Pakistan's Education System

While there have been significant successes, such as improved student engagement and higher academic performance in some institutions, challenges remain. Resource constraints, a lack of widespread teacher training, and resistance to change in rural and less-developed areas continue to limit the effectiveness of active teaching strategies in many parts of Pakistan.

- ***Success stories:*** *Schools and universities that have successfully implemented active teaching methods report increased student motivation, improved critical thinking skills, and better academic outcomes.*
- ***Challenges:*** *The major obstacles include a lack of resources, limited access to technology, and traditional attitudes toward education, particularly in rural areas.*

7. Recommendations for Effective Implementation

To overcome the challenges associated with active teaching strategies and ensure their effective implementation, several recommendations can be made:

Training and Professional Development for Educators

Educators need continuous professional development to equip them with the skills and knowledge necessary to implement active teaching strategies effectively. This includes training on:

- *Designing interactive and engaging learning activities.*
- *Using technology and digital tools to support active learning.*
- *Managing classroom dynamics in student-centered environments.*

Collaboration Between Institutions to Share Resources and Strategies

Educational institutions can benefit from collaborating with one another to share resources, experiences, and best practices. Creating networks of educators and institutions will allow for the exchange of ideas and strategies, helping to overcome some of the resource constraints faced by individual schools and universities.

Policy Reforms to Encourage Active Learning Environments

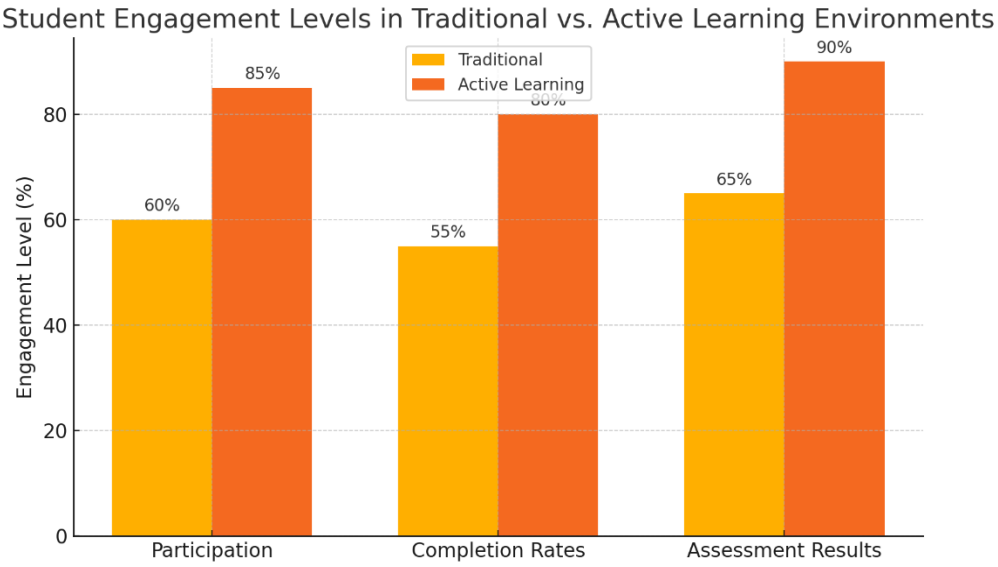
Government and institutional policies should support the adoption of student-centered learning by:

- *Providing funding for educational technology and teaching resources.*

- *Mandating professional development for educators.*
- *Encouraging flexibility in curriculum design to allow for the integration of active learning strategies.*

By addressing these areas, Pakistan's education system can foster a more engaging, effective, and student-centered learning environment that prepares students for the challenges of the 21st century.

Graphs and Charts:



Graph 1: *Student Engagement Levels in Traditional vs. Active Learning Environments*

- *A comparison of engagement levels (measured by participation, completion rates, and assessment results) between traditional and student-centered classrooms.*

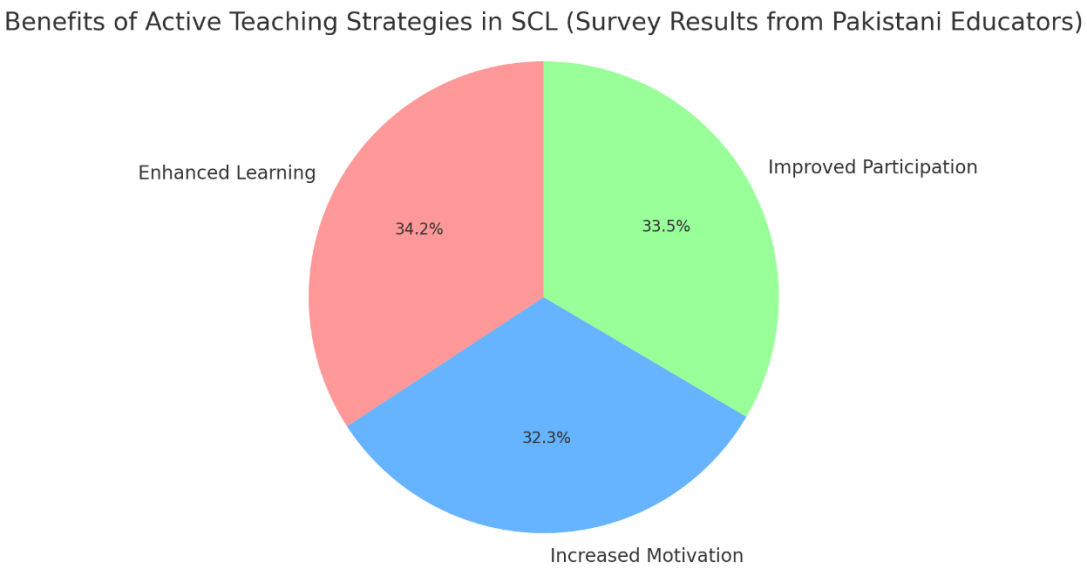


Chart 1: *Benefits of Active Teaching Strategies in SCL*

- *A chart summarizing the benefits of active learning strategies (enhanced learning, motivation, participation) based on survey results from Pakistani educators.*

Summary:

Student-Centered Learning (SCL) offers a transformative approach to education, focusing on the needs, abilities, and learning styles of students. This paper examines the effectiveness of active teaching strategies—such as problem-based learning, flipped classrooms, and collaborative learning—on student engagement and academic performance. By shifting from traditional lecture-based teaching to more interactive and participatory approaches, students are empowered to take ownership of their learning, which fosters greater motivation, critical thinking, and collaboration.

In the context of Pakistan, where traditional teaching methods are still prevalent in many educational institutions, this paper discusses the practical challenges and benefits of adopting active teaching strategies. Case studies from Pakistani universities and schools illustrate the positive impact of these methods on student engagement, although challenges such as lack of resources, teacher training, and resistance to change remain prevalent.

The findings suggest that effective implementation of student-centered teaching methods requires a supportive environment, including adequate teacher training, institutional support, and policy reforms that encourage active learning. The paper concludes with recommendations for educators, policymakers, and institutions to foster a culture of active learning and student engagement.

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