Active learning and effective teaching strategies

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Abstract – This paper aims to present active learning as an approach to education that emphasizes student engagement and participation. This approach contrasts with traditional lecture-based teaching, where students are passive recipients of information. This paper will discuss the benefits of active learning and the effective strategies for its implementation. It will present some of the benefits of the active learning for students such as the increased student engagement and motivation that can lead to better retention of material and improved academic performance, and the promotion of critical thinking and problem-solving skills, through activities such as group work and problem-solving encouraging students to think critically and apply their knowledge to real-world situations. The paper will also highlight several effective ways for teachers to develop knowledge in active learning through attendance of workshops and training sessions, active collaboration with colleagues, engagement in self-study, experimenting with active learning. The paper also will discuss strengths and weaknesses of this approach and give some practical examples of teaching strategies for active involvement of students and give some basic rules of the approach. The paper will conclude that active learning is an approach to teaching and learning that promotes student engagement and participation in the learning process. It includes a variety of strategies, such as discussion, writing, and cooperative learning, which can be used to actively engage students in the classroom. Active learning can improve learning outcomes, promote critical thinking skills, and increase student motivation and interest in the subject.

Keywords – Learning, Teaching, Strategies, Benefits, Challenges, Students

I. INTRODUCTION

Active learning is an approach to education that emphasizes student engagement and participation. It involves students actively engaging with course material through discussion, problem solving, and other interactive activities. This approach contrasts with traditional lecture-based teaching, where students are passive recipients of information. This paper will discuss the benefits of active learning and the effective strategies for its implementation. Active learning is an educational approach in which teachers ask students to apply classroom content during learning activities and reflect on the actions they have taken. Teachers using active learning approaches can have students solve problems, work as part of a team, provide feedback to classmates, or peer tutor as ways to put new content to work.

Active learning requires students to operate at high cognitive levels, analyse, synthesize, and evaluate during learning tasks. This paper will discuss the benefits of active learning and effective strategies for its implementation.

II. MATERIALS AND METHOD

When students take notes silently during a lecture, they are acting as passive learners. Lectures invite student passivity, and research shows that passive students learn less. Lectures are teacher-centred activities that require only the teacher to process the academic content. Active learning approaches, on the other hand, are student-centred, requiring students to manipulate academic content during learning and placing the teacher in an advisory role. The essence of active learning is that, to learn, students must do more than just listen. With an active learning approach, teachers design instructions that invite students to act and reflect on the skills and/or knowledge needed to complete a given task.

The benefits of active learning

Active learning has several benefits for students. One of the main benefits is that it increases student engagement and motivation. When students are actively involved in the learning process, they are more likely to be interested and invested in the material. This, in turn, can lead to better retention of material and improved academic performance. Active learning also promotes critical thinking and problem-solving skills. Through activities such as group work and problem solving, students are encouraged to think critically and apply their knowledge to real-world situations. This can help students develop skills that are valuable in their future academic and professional endeavours.

The importance of teacher knowledge in active learning

Teacher knowledge is essential in the effective implementation of active learning strategies. Without a solid understanding of active learning principles and strategies, instructing teachers may struggle to engage students and create effective learning experiences. Instructing teachers with knowledge of active learning can design and facilitate activities that encourage critical thinking,

problem solving, and collaboration, leading to better learning outcomes. Teachers who are knowledgeable in active learning are also better equipped to adapt their teaching to meet the needs of individual students. They can create activities that are appropriate for students with different levels of knowledge and ability and provide support and feedback that is specific to individual students.

Effective ways for teachers to develop knowledge in active learning

There are several effective ways for instructing teachers to develop their knowledge of active learning: Attend workshops and training sessions: Many universities and professional organizations offer active learning workshops and training sessions. Attending these events can give teachers an opportunity to learn more about different active learning strategies and how to implement them effectively.
Collaborate with colleagues: Collaborating with colleagues who have experience in active learning can be an effective way for teachers to develop their knowledge. Peers can provide guidance and support, as well as share resources and ideas.
Engage in self-study: Teachers can also develop their knowledge in active learning through self-study. Reading books and articles, watching videos, and taking online courses are all ways to learn more about active learning.
Experiment with active learning: Teachers can develop their knowledge of active learning by experimenting with different strategies in the classroom. By trying different activities and reflecting on their effectiveness, teachers can develop a better understanding of what works best for their students.

Successful interaction with students

Successful interaction with students is a critical aspect of effective teaching. Building positive relationships with students helps create a supportive and engaging learning environment that fosters academic success.

Show genuine interest in students: One of the most important strategies for successful interaction with students is to show genuine interest in them. Take the time to get to know your students as individuals, learn their interests, and understand their motivations. When students feel that you care about them as individuals, they are more likely to be engaged and motivated in class.

Be approachable: Being approachable is another critical aspect of successful interaction with students. Students should feel comfortable addressing you with questions or concerns without fear of being judged or criticized.

Use positive reinforcement: Positive reinforcement is a powerful tool for promoting positive behaviour and academic success. Use praise and positive feedback to encourage students to continue to display good behaviour and academic achievement.

Be clear and consistent: Clarity and consistency are important for building trust with students. Communicate your expectations and requirements clearly and be consistent in implementing them. This will help create a predictable and structured learning environment that fosters student success.

Use active listening: Active listening is an important skill for effective communication and interaction with students. Take the time to listen to your students' perspectives and opinions and respond to them thoughtfully and respectfully. This will help to create a sense of trust and respect between you and your students.

Be respectful: Respect is a critical aspect of successful interaction with students. Show respect for your students by treating them as individuals with unique backgrounds and experiences. Be aware of cultural differences and avoid stereotypes or assumptions based on cultural background. This will help create a welcoming and inclusive learning environment that fosters academic success.

Lectures in active learning: Traditionally, lecture has been the dominant teaching method in higher education. However, as the field of education has evolved, there has been a growing recognition that lecture alone is not sufficient to promote deep learning and engagement. Active learning is a teaching approach that emphasizes student-cantered, participatory learning activities. In active learning, discourse can still play a role, but it must be used strategically and thoughtfully. Discourse can be a valuable tool for introducing new concepts, providing context, and conveying important information. However, to be effective in an active learning environment, lecturing must be used in conjunction with other teaching methods. One way to use discourse effectively in active learning is to use it to set the stage for more interactive activities. For example, a short lecture can be used to introduce a new topic, followed by group discussions or other interactive activities that allow students to apply the information in a more meaningful way. This approach allows students to engage with the material in a more active and participatory way, rather than just passively listening. Another way to incorporate discourse into active learning is to use it to provide feedback and reflection. After an activity, debriefing can be used to summarize key points and highlight areas for improvement. This approach helps reinforce learning and provides students with valuable feedback that can help them improve their performance in future activities. Discourse can be used to provide context and connections between different activities. Lecture can help to tie different activities together and give students a sense of the big picture. By providing context and connection, discourse can help students better understand how different activities relate to each other and to overall learning objectives.

III.RESULTS

Strengths of the approach

Efficient dissemination of information: One of the main strengths of the lecture approach is its efficiency in delivering information to a large group of students. Lecturing allows a teacher to present a significant amount of information in a relatively short amount of time. This is especially useful when introducing new concepts or providing insight into a complex topic.

Teacher expertise: The lecture approach also allows the teacher's expertise to be showcased. The lecture provides an opportunity for teachers to share their

knowledge and expertise on a subject. This can be particularly useful in subjects that require specialized knowledge or skills technical.

Ability to engage students: When done effectively, lecturing can be a very engaging and interactive experience for students. Lecturers can use a variety of tools and techniques to keep students engaged, such as multimedia presentations, group discussions and hands-on activities.

Encourages critical thinking: Lecture can also foster critical thinking skills in students. When new information is presented, students must evaluate and analyse it to fully understand it. Lecture can help promote critical thinking by presenting information in a structured and organized manner, allowing students to make connections and draw conclusions more easily.

Consistency: Lectures can provide a consistent approach to learning, which can be beneficial for students who prefer a structured approach to their studies. For example, lectures may follow a predictable format or schedule, with regular breaks and opportunities for questions and discussion. This can help students plan their study time and develop a sense of routine and structure around their learning.

Disadvantages of the approach

Passive learning: One of the main weaknesses of the lecture approach is that it tends to promote passive learning. Students are expected to sit and listen to the lecturer, absorbing information without actively engaging with it. This can be particularly problematic for students who learn best through hands-on activities or by actively participating in their own learning.

Limited feedback: The lecture also provides limited feedback to students. In a traditional lecture, students may not have the opportunity to ask questions or receive individualized feedback. This can make it difficult for students to assess their own understanding of the material or identify areas where they need additional support.

Limited interaction: Discourse also limits the interaction between the teacher and the students, as well as between the students themselves. This can make it difficult to build a sense of community in the classroom and can lead to a lack of engagement and motivation.

Accessibility: The lecture approach may be less accessible to students with different learning styles, such as those who learn best through hands-on activities or those with learning disabilities. This can lead to a lack of engagement and motivation, as well as a feeling of exclusion from the learning process.

Memory overflow: Students can become overwhelmed with the amount of information presented in a lecture and may struggle to retain information over time.

Learning difficulties: Students with learning difficulties or disabilities may struggle to keep up with the pace of the lecture or may require additional support not available in a lecture format.

IV. DISCUSSION

Active learning involves students actively engaging in their learning process. It requires the use of instructional strategies that encourage students to participate, reflect, and think critically.

Peer learning: Classes may be divided into groups of about five students with a mix of increasingly less proficient students in each group. Groups are given learning tasks that will require them to share knowledge and experiences. The assignment may be to answer some review questions, raise some critical issues about a topic, solve a problem, apply some principles, or create a product. If the groups are well balanced, the task is clearly described, and the time allotted is appropriate for the task, the group will engage in peer learning and increase their ability to function in an interpersonal environment in the process. The role of the teacher is to serve as a designer by carefully structuring the groups and tasks and to serve as a facilitator while the groups are working, helping with interpersonal or task-related problems they have.

Disclosure format: In a discovery or inquiry format, the teacher sets up a new situation, an interesting puzzle, or an open-ended question that students are asked to explore using their creativity and resources. They may be asked to guess, based on only partial

information, what building materials were used to construct an ancient building; they may be asked to build a device to measure something or make certain musical tones; or they may be asked to interview each other about what causes depression in their lives. The teacher once again serves as an activity designer, selecting activities that are likely to lead students to accomplish a learning goal, and as a process facilitator, helping students find the resources they need. In the discovery format, it is important for the teacher to remain as non-directive as possible so that students can develop their independence.

Role play: Role play can be used to develop empathy, to enliven a historical, philosophical, or literary theme, or to provide a concrete representation of an abstract theme. Volunteers are asked to portray certain roles and are given enough context information to enable them to improvise dialogue and actions. In some classes, teachers have followed the lesson in the role of a character and called on colleagues to join them in creating a situation for the students. The class is also asked to role play those in the situation, asking questions or engaging in dialogue in ways that would be appropriate to the setting.

Think: Students are given a question or problem to think about. They may be asked to brainstorm, make connections between concepts, or apply their learning to a real-world scenario.

Pair: Students pair up with a partner to discuss their thoughts and ideas. They may be asked to explain their thinking, challenge their partner's ideas, or collaborate to find a solution to a problem.

Share: Students then share their ideas with the larger group. This can be done in a variety of ways, such as through a whole-class discussion, a gallery walks, or a written reflection.

Class debate: Using a central corridor or a real or imaginary border to divide the classroom space in half, the teacher presents a controversial proposition and asks those who agree to sit in one section and those who disagree to sit in the other. (The teacher may also want to create a third section for those who are undecided.) The teacher then moderates, asking students from one section, then the other, to support their position. At intervals of perhaps fifteen minutes, students are given the opportunity to move on to another section, based on whether they have changed their attitudes through listening and participating in the debate. A variation on this theme is to have students argue for the opposite of their original positions by changing the names of the parts after students have already chosen positions. The teacher is responsible for raising the proposal, applying the rules of the debate, and summarizing the discussion and results of the debate.

Simulations

Simulations allow students to engage in learning activities that might otherwise be too time-consuming, too expensive, or ethically controversial (requiring animals or human behavioural interventions). Using a designed game or computer software or creating a scenario, the teacher develops a simulated environment within which students will engage in activities directed toward a learning goal. They may be required to form companies and form unions; they may be asked to develop marketing packages to present to a real or simulated customer; they may be blind to experience a lack of sight; or they may be asked to recreate a military battle or other historical event using a new strategy. The role of the teacher is to identify and anticipate simulations set for use in the course or to create scenarios that are likely to engage students in experiential learning directed toward a course goal. During the simulation, the teacher serves as a facilitator.

Some basic rules of the approach

Ground rules can be ways to get students to master the concept of co-creating a classroom environment conducive to learning. By gaining classroom agreement on the ground rules early on, teachers can ensure student support and participation in enforcing them. The four suggested basic rules are:

Participation. Instead of generalizing and saying, "those people" or "don't you think," teacher can encourage students to use "I" statements and talk about their experience. Personalizing the discussion invites diverse perspectives from students who often find themselves on the fringes of university life, such as students of non-traditional ages, students of

colour, etc. Teacher can ask students who they know tend to monopolize discussions to self-monitor and make room for quieter students. At the same time, teacher can encourage students who tend to be quieter to contribute to improved learning by sharing their perspectives and experiences.

Confidentiality. Teacher can encourage students to take concepts and ideas from the classroom and discuss them freely; however, they should suggest that personal stories or issues raised by individuals should be kept confidential and the property of the class.

Respectful listening. If teacher demonstrate that they are good listeners, they can encourage students to raise questions. Teacher can emphasize that if someone raises a point that others disagree with or find offensive, it is important to remember that the human being behind that question or comment deserves respect.

No sitting. Linked to the notion of respect is the basic rule of no class, not even the humorous variety called "zaps". To "shut down" one person often serves to discourage the open and honest exchange of ideas among the entire group.

Be prepared for student frustrations and allow students to vent. Don't let anger, frustration, tone, etc. of the students to put you on the defensive. Student-instructor communication is not a competition. Avoid the temptation to "show who's boss."

Agree with students that they are entitled to their feelings and try to work toward a solution. Although you may not understand the intensity of the emotion expressed, don't let this gap get in the way of your role as a teacher and problem solver. Just acknowledge where the student is coming from and try to separate the problem from the expressed emotion.

Be an active listener. Repeat and summarize a student's comments. Paraphrasing allows the student to assess whether you understood the complaint and helps the student and the teacher frame the problem to be addressed. This also allows you to filter out some of the emotions and guide the discussion.

Practice the art of questioning. Use open-ended, leading questions with students. If the student says,

"You graded my paper unfairly. I didn't even know what you wanted," resist the temptation to reply, "Why didn't you ask me before you started writing?" Nothing is gained when you launch into a lecture on sliding academic standards and your personal obligation to restore integrity to the university. Instead, ask the student how he came to this conclusion. Should you have provided more feedback? Were your comments clear? What did the student think was unfair about your assessment? The student's answers to your questions will give insight into the immediate problem and help you build a picture of the student's mindset. Questions also help to separate issues. You might ask, for example, "Are you angry about the grade you received or my comments on your paper?" The answer will help you work with the student toward specific solutions. Finally, in many cases asking questions diffuses student anger because it shows the student that you are taking their concerns seriously.

Take student perceptions seriously. Try to eliminate statements like these from your conferences with students: "You're wrong," or "That's irrational," or "That's not rational," or "You're too emotional." Instead, acknowledge the students' perceptions and try to find out why they see things the way they do. You may find, for example, that students view education as a commodity: they pay for their tuition and deserve a grade for it. Or they may believe that the time they spend preparing for a test or doing an assignment should ensure a certain grade. You may see things very differently, but if these are the student's perceptions, you must discover and address them before you can hope to resolve any disagreements with the student.

Propose multiple options to address student concerns. Demonstrate your willingness to help the student address the conflict. Aim for a favourable settlement. For example, if a student has done well on their homework but failed a test, you might suggest that student join another to study for tests or come to your office for help before the test. Perhaps you need to counsel the student on test-taking skills because the student may experience test anxiety, which interferes with performance. Do not

emphasize the students' obligations to fix their problem or accept the consequences.

Conclude the session with an action plan. After discussing options, reinforce the problem-solving nature of the meeting by creating specific agreements with specific actions expected from both parties. Students who leave with a plan in hand will feel valued and more open to future learning.

V. CONCLUSION

In conclusion, active learning is an approach to teaching and learning that promotes student engagement and participation in the learning process. It includes a variety of strategies, such as discussion, writing, and cooperative learning, that can be used to actively engage students in the classroom. By engaging students in the learning process, active learning can improve learning outcomes, promote critical thinking skills, and increase student motivation and interest in the subject. Effective strategies for active learning include setting clear learning goals, providing students with feedback, and using a variety of teaching methods to engage students. These strategies can be adapted to meet the needs of individual students and can be used in a variety of educational settings, from primary schools to universities. Effective teaching requires knowledge and understanding of the subject as well as an understanding of the needs and learning styles of individual students. Teachers who use active learning strategies must be flexible, creative, and willing to experiment with different teaching methods to engage their students.

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