ACTIVE LEARNING IN THE UNIVERSITY TEACHING ENVIRONMENT

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ABSTRACT. *The University Teaching Environment nowadays faces the necessity to adopt new methods of instruction. Through class discussion, think-pair-share, role-playing, just-in-time teaching, peer review, Socratic questioning or game-based learning, active learning is meant to allow this change to occur. Active learning is the technique that urges students to engage with the material, participate in the class, and collaborate with each other. Under these circumstances, instructors should no longer expect their students simply to listen to the lectures and memorize their content; instead, students must be helped to demonstrate a process, analyze an argument, or apply a concept to a real-world situation.*

KEY WORDS: *active learning, educational environment, pedagogical strategy, teaching approach*.

Motto:

'Learning is not a spectator sport. Students do not learn much just by sitting in class listening to teachers, memorizing pre-packaged assignments, and spitting out answers. They must talk about what they are learning, write about it, relate it to past experiences, apply it to their daily lives. They must make what they learn part of themselves.' (Arthur W. Chickering and Zelda F. Gamson, 1987)

Active learning is a student centred approach in which the responsibility for learning is placed upon the student, who often works in co-operation with his classmates. In this approach teachers are facilitators rather than one-way providers of information. In the traditional learning approach the presentation of facts is introduced through straight lecture. Active learning favours techniques such as short demonstrations followed by class discussion, game-based learning, role-playing, think-pair-share, peer review, just-in-time teaching, etc.

Class discussion can enhance student understanding, add context to academic content, broaden student perspectives, highlight opposing viewpoints, reinforce knowledge, build confidence, and support community in learning.

There are two easy ways to promote active learning through discussion. The first method is the mini-lecture format in which the instructor talks ten to twenty minutes about a particular topic and then pauses for students to consolidate their notes, find gaps, and work with classmates to fill in gaps.

The second technique is an active listening lecture where students just listen to a lecture without writing notes and then, after ten to twenty minutes, the student works with a classmate or small group to recall, clarify, and elaborate on the content of the lecture.

A valuable discussion will be based upon two basic pillars:

- respect: all participants must be respectful of all other participants, the course, the institution, the society, and all identifiable groups. Rude behaviour, such as interruption, ridicule, anger, personal remarks, are disrespectful and must not be tolerated;
- responsibility: all participants are responsible to offer thoughtful remarks that are useful and contributory to the goals of the discussion. Reactionary comments, angry replies, and inappropriate attempts at humour are counterproductive and disrespectful.

Think-pair-share is a technique in which students ponder the answer to a question on their own and then share their thoughts with a partner before settling on a final answer. A think-pair-share activity only takes a small amount of the class time, it is easy to accomplish especially in large classes and offers the teacher the opportunity to ask different kinds and levels of questions, engaging the whole class. The personal interaction motivates students who might not generally be interested in the discipline taught. Students' understanding of the lessons is assessed by listening in on several groups during the activity, and by collecting responses at the end.

Role playing is an excellent tool for engaging and motivating students in order to allow them to interact with their peers while trying to complete the task assigned to them by their teacher in their specific role. This technique determines students to work in cooperative groups.

The advantages of role playing are numerous: students immediately apply content in a real world context and think beyond the confines of the classroom setting; the instructor and students receive immediate feedback with regard to the student's understanding of the content; students engage in higher order thinking and learn content in a deeper way, etc.

On the other hand, one of the biggest challenges of the role playing technique is to get all students to participate and be truly engaged. Thus, role playing activities should always offer a relevant scenario to students. This scenario should include the role the student must play, the informational details relevant for decision making in this role, and a task to complete based on the information. In best cases, this information might be provided on the screen through power point or by using a handout. It is highly recommended that the instructions be provided in writing so it is clear to the students what they must do and how they must do it.

Peer-review is a technique through which students learn to review and comment on materials written by their classmates. Traditional peer-review exercises can also be modified with the addition of technological tools to facilitate the process. Students can write and review the writings of their peers online. Peer-review involves four inseparable stages: writing, training on how to evaluate texts on the given topic, peer review, and self-review.

Although peer-review is an important part of the scientific process, yet many students do not receive an opportunity to participate in this valuable exercise, due to the amount of in-class time it takes to complete and students not reporting meaningful comments for fear of complete anonymity. However, teachers should keep in mind that peer-review can be used to review research papers, to research lecture material, to review other students' designs, to do weekly reviews in independent-study courses, etc.

Moreover, peer-review is useful for instructors of large introductory-level courses that want to challenge their students to think critically, synthesize information, and communicate science in nontechnical language.

Peer review provides loads of benefits for the students, who develop key skills such as abstracting, developing arguments, describing, assessing, criticizing, analyzing, and reviewing. With the assignments, students encounter engaging ideas, ponder important issues, and develop critical thinking skills.

Socratic Questioning, also known as the **dialectical approach**, is a type of questioning that can correct misconceptions, leading to reliable knowledge construction. Named for the early Greek philosopher Socrates, a Socratic approach to teaching is one in which the instructor poses thoughtful questions to help students learn.

As described in the writings of Plato, a student of Socrates, the teacher feigns ignorance about a given subject in order to acquire another person's fullest possible knowledge of the topic. Individuals have the capacity to recognize contradictions, so Socrates assumed that incomplete or inaccurate ideas would be corrected during the process of disciplined questioning, and hence would lead to progressively greater truth and accuracy.

Socratic Questioning provides unique opportunities for critical thinking and student reflection, helping students to think critically by focusing explicitly on the process of thinking. During Socratic questioning, the teacher is a model of critical thinking who respects students' viewpoints, probes their understanding, and shows genuine interest in their thinking. In order to be successful in applying this approach, the teacher must create and sustain an intellectually stimulating classroom environment and acknowledge the value of the student in that environment. Thus, in an intellectually open, safe, and demanding learning environment, students will be challenged, yet comfortable in answering questions honestly and fully in front of their peers.

Some tips for the teachers willing to approach the Socratic-questioning technique are: plan significant questions that provide structure and direction to the lesson; phrase the questions clearly and specifically; maintain silence and wait at least five to ten seconds for students to respond; keep the discussion focused; follow up on students' responses and invite elaboration; stimulate the discussion with probing questions; periodically summarize what has been discussed; draw as many students as possible into the discussion; do not pose yes/no questions, as they do little to promote thinking or encourage discussion; do not pose questions that are vague, ambiguous, or beyond the level of the students.

Before engaging students in a Socratic-questioning activity the teacher should tell the students that they are expected to do the following: participate when called upon; answer questions as carefully and clearly as possible; address the whole class so that everyone can hear their answers; be as succinct as possible in the interest of maximizing classroom time and effectiveness.

Just-in-Time Teaching focuses on improving student learning through the use of brief web-based tasks (read a textbook or article, complete a simulation or experiment, watch a video, etc.) delivered before a class meeting. Students' responses are reviewed by the instructor a few hours before class and are used to develop classroom activities addressing learning gaps revealed in the responses. This technique allows instructors to quickly gather information about students'

understanding of course concepts immediately prior to a class meeting and tailor activities to meet students' actual learning needs.

Just-in-Time Teaching promotes active student engagement and increased learning by intentionally linking out-of-class and in-class activities. A key to being successful with Just-in-Time Teaching is developing small clusters of questions that address key course learning outcomes, typical student misconceptions, conceptual bottlenecks, discipline-based critical and/or analytical thinking skills, or meta-cognitive skills.

In practice, the Just-in-Time Teaching exercises can be a combination of multiple choice and short answer or essay questions. The experience revealed that they are most effective when they require students to prove their understanding of the assigned material. To accomplish this, it is best if at least some of the questions are open-ended.

Game Based Learning uses competitive exercises, either pitting the students against each other or through computer simulations. The categories of games that can be adapted for learning include video games, and board and card games.

Game-based Learning is used in order to make knowledge acquisition more fun, to motivate students to learn**,** to immerse students in the material so they learn more effectively, to encourage students to learn from their mistakes.

It is well-known that games in general engage people. Amory (1999) found that first- and second-year university students preferred strategy and adventure games to shooters and simulations. One reason to promote educational games is to encourage students to learn outside of class. There is also evidence that games allow students to focus well enough to learn better. Lepper and Cordova (1992) have found that rewriting a lesson with a story context combined with a challenge for the student to overcome (in other words, making it into a game) significantly improves the student's learning performance.

Another reason that games are such a great escape from the real world is that bad consequences are rarely serious or lasting. In case of losing, students are encouraged to start the game over and try again. Often, it is possible to recover within a game, and to use what one has learnt to successfully complete a task. Moreover, during a game characters and pieces may die, but this is rarely permanent, and there are no consequences for the player personally.

On the other hand, most games, even some intended to be educational, do not involve useful learning. Learning goals have to be essential for winning or the material is likely to be ignored. (Lepper and Cordova, 1992)

The most important issue when speaking about games is to know what makes a good game. Among the characteristics of a good game it is worth mentioning the following:

- continuous challenge: a good game designer gives his players continuous challenges, each of which leads to another challenge, to keep them 'hooked' on playing a game. This can be done by setting clear, short-term goals appropriate to the level of the player and the context within the game. Each challenge should satisfy some kind of learning objective;
- interesting storyline: a good storyline can liven up a competition. So instead of having students use games to escape *from* their studies, instructors should encourage students to use games to escape *into* their studies;
- flexibility: instructors must make sure that there are many different ways to accomplish each goal of the given game. Simply plotting out a step-by-step progression through the

goals can be stifling. As much as possible, each student or team should be allowed to work out their own strategy to the endpoint while still keeping the game challenging and achieving the learning objectives;

- immediate, useful rewards: instead of just pointing towards victory, successful players can be rewarded with new capabilities, a new part of the board to explore or even a new task. These incentives are surprisingly motivating, as the point of the game is not just to win it, but to keep playing;
- combining fun and realism: many so-called games are actually simulations without goals and challenges. On the other hand, excessive realism can also be boring. Moreover, even good games often incorporate incorrect assumptions or reward unrealistic behaviours, such as giving players too much time to make decisions. (Prensky, 2002)

The analysis of the above active learning techniques revealed the numerous benefits of this approach: students are more likely to access their own prior knowledge, which is a key to learning; students are more likely to find personally meaningful problem solutions or interpretations; students receive more frequent and more immediate feedback from their teachers; the need to produce forces learners to retrieve information from memory rather than simply recognizing a correct statement; students increase their self-confidence and self-reliance; for most learners, it is more motivating to be active than passive; a task that has been done by oneself or as part of a group is more highly valued; student conceptions of knowledge change, which in turn has implications for cognitive development; students who work together on active learning tasks learn to work with other people of different backgrounds and attitudes; students learn strategies for learning itself by observing others.

In conclusion, active teaching and learning requires a review of one's teaching approach and a significant paradigm shift where student learning by means of active participation is the goal. Class discussions, think-pair-share, role-playing, just-in-time teaching, peer review, Socratic questioning, and game-based learning are all strategies that favour an active learning approach and are increasingly gaining popularity in the University Teaching environment.

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