Active Learning Methods

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Effective learning involves providing students with a sense of progress and control over their own learning. This requires creating a situation where learners have a chance to try out or test their ideas. This testing is ideally accomplished by connecting students' ideas to concrete experience and that's where the "active" part of the learning comes in.[1] Active learning involves providing opportunities for students to meaningfully talk and listen, write, read, and reflect on the content, ideas, issues, and concerns of an academic subject.[1,2] Students do not learn much just sitting in classes listening to teachers, memorizing prepackaged assignments, and giving out answers. They must talk about what they are learning, write reflectively about it, relate it to past experiences, engage themselves in learning by doing and apply it to their daily lives. The disadvantages of a traditional classroom are many. When it comes to learners and education, attempting to force all learners to learn in the same way is counter-productive to producing healthy, well-educated and all-rounded adults.[3] Modern classrooms and teachers are expected to take care of the individual differences of the learners and their learning styles so that no learner is left behind without learning at least all the "must know concepts and skills" and develop proper attitude towards their profession.

Present generation students are primarily active learners with varied learning experiences and lecture courses may not suit all their learning needs.[3] Chickering and Gamson,[4] early proponents of active learning, designated "encourage active learning" as one of important principles of good practice in higher education. Active learning a term popular in US education circles in the 1980s, encourages learners to take responsibility for their learning, requiring their experience in education to inform their process of learning.[3]

The basic activities or elements through which all students learn are talking and listening, writing, doing, reading and reflecting, and specific active learning strategies use one or more of these elements. There are four broad categories of learning strategies that one might use in an active learning classroom. They are individual activities, paired activities, informal small groups and cooperative student projects. The choice of these will depend on the size of the class, available physical space, objectives of the class, the amount of time the teacher can devote to the activity, and the comfort level of the teacher with the strategy. There are a wide range of learning strategies that promote and encourage active learning among adult learners.[4,5] This article briefly describes about some of the popular active learning strategies that have resulted in enhanced learning and are widely followed across the medical schools globally.

Concept maps

Charts, diagrams, webs, maps, as well as pictures, can be used as visual examples of abstract concepts. Concept maps, in particular, are concerned with relationships among ideas. A concept map illustrates connections that exist between terms or concepts covered in course material. Students work in groups to construct concept maps by connecting individual terms by lines which indicate the relationship between each set of connected terms. Most of the terms in a concept map have multiple connections. Developing a concept map requires the students to identify and organize information and to establish meaningful relationships between the pieces of information. They help students decide the important points and how they relate to each other. Students may be asked either individually or as groups, to develop one of these visual structures. Members of groups can be asked to come to a consensus and present one form to the class which can also be shared, discussed, and synthesized into new ones for better understanding.[6]

Collaborative writing

A collaborative writing assignment can be organized in several ways especially by avoiding giving one person all the work. A group may be asked to break down a writing assignment into parts and each student will write his or her part and then brings it to the group for compilation and editing[7].

Brainstorming

The operant word in the definition of brainstorming is generating. In brainstorming, students are encouraged to generate as many ideas on the topic as possible without judgment or critique. Brainstorming is a process for developing creative solutions to problems. Brainstorming works by focusing on a problem, and then deliberately coming up with as many solutions as possible and by pushing the ideas as far as possible. One of the reasons it is so effective is that the brainstormers not only come up with new ideas in a session, but also initiate associations with other people's ideas by developing and refining them. Students can use this session as an opportunity to make connections, freely associate, and recognize that they have been engaging with the topic in ways they may not have been aware.[7,8]

Collaborative Learning

Recent research suggests that individuals in small groups learn better than they do on their own or in isolation. In light of the research on active learning, this is not surprising, as a small group initiates collaborative learning and its resulting activities: students generate questions, discuss and arrive at conclusions, turn thought into written or oral language, etc. Any class size can benefit from collaborative learning. With some

modifications, groups can be successful even in very large lecture classrooms.[7]

One Minute Paper/Free Write

In this method participants are asked to write for 2-3 minutes on a topic or in response to a question developed by the faculty for the session. This is particularly useful in those moments where facilitators want the participants to move from one level of understanding to another, from presentation of new ideas to application of ideas, from considerations about self to situations involving others.[9]

Scenarios/Case Studies

In this method participants discuss and analyze the scenario/case provided by facilitator, and deliver presentations on their findings to other small groups or to the whole group or simply record ideas on an overhead/white board so that the facilitator can draw questions and synthesis from the material. Participants can also develop (individually, in pairs, groups) their own work-based case studies and exchange them with others for discussion and analysis.[9]

Problem-Based Learning

Problem-based learning (PBL) begins with a problem prepared by the instructor that generally cannot be easily solved without data collection and mastery of subordinate skills. Students search for resources and faculty guide students to collect information and resources. Faculty help students learn to frame the right questions, formulate problems in clear and organized language, explore alternatives, and make effective decisions. The theory is that by solving problems students learn to generate procedures that they can use again when they encounter another, similar situation.[9]

Team-Based Learning

Team based learning is a type of collaborative learning which is generally characterized by students working in groups in some sort of learning activity. The basic concept is that they will be able to help each other learn better than if they were to study alone. Team Based Learning is a method where the students study the material outside of class. When the students get to class, as individuals they take a readiness assessment test (RAT) over the material they were assigned to read. This is generally a multiple choice test over the reading content, which is collected when they finish. When everyone finishes, the pre-assigned group gets together, and they take the same test as a group, discussing the possible answers, and making a group decision on the best answer. Here they get immediate feedback whether their answer was correct or incorrect. Teams can also be given a critical thinking task to a problem that does not necessarily have a correct or incorrect answer. By applying the TBL technique a group decision on the best answer can be made by the teams. The teams can then present their answers and give a rationale for their solution.[9,10,11]

Case-based Instruction

Case-based instruction (CBI) is different from PBL in which students are exposed to the content for the first time when they read the scenario. The scenario becomes part of the explanation of the lesson in PBL. CBI, by comparison, introduces cases after the students have completed lectures or lab units. They apply learned theories to real-life situations. The use of cases allows students to integrate and apply developing clinical and basic science knowledge and skills such as clinical reasoning, critical thinking, problem solving, and interpersonal ability to hypothetical or real case scenarios. Case studies provide a process of participatory learning that facilitates active and reflective learning.[9]

Panel Discussions

In panel discussions students are asked to give presentations by working in groups and then receive questions from the rest of the class after the presentation. This could also be turned into a debate where groups are given alternative positions to defend and the groups present their arguments, followed by whole class discussions on the topics.[9]

Teaching to learn/Peer teaching

In this the students are helped to adjust to a new role by having them teach to a small group. Explain them of all the active teaching and learning techniques that they could use and give them enough preparation time. Students may be provided with clues on what facilitators are expecting from them. Topics that would supplement the class should be provided for teaching. Some of the more effective students to teach to the entire class should be selected for this method. Facilitators can also participate as students and ask helpful or follow-up questions that will help the student teacher to extend himself/herself.[10]

Role Playing, Drama, and Simulations

Affective qualities such as empathy, as well as understanding of concepts can be stimulated through role plays. Putting all the theories into practice, simulation can be the students' first chance to face the realities of what they have learned and the attitudes they have connected to the learning. Simulation is a growing topic on the Internet and a search in the concerned discipline may show several simulations that one can use for his/her classes.[11]

Conclusion

The benefits of active learning are widely acclaimed in higher education. There is some research evidence that this approach supports critical thinking and problem solving which are essential determinants of quality medical education.[4] Active learning promotes proper knowledge, attitude and skills among the students. The basic concept is that students will be able to learn better if they are subjected to active learning environments which also encourage learners to take responsibility for their learning.

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