
Innovative Teaching Practices for Modern Pedagogy

B. ANISHA

*Assistant Professor, Grace College of Education,
Padanthalumoodu, Kanyakumari District, Tamil Nadu.*

The purpose of education is not just making a student literate but adds rationale thinking, knowledge, ability and self-sufficiency. When there is a willingness to change, there is hope for progress in any field. Creativity can be developed and innovation benefits both students and teachers. Education is a light that shows the mankind the right direction to surge. If education fails to inculcate self-discipline and commitment to achieve in the minds of student, it is not their fault. We have to convert education into a sport and learning process has to generate interest in the students and motivate them to stay back in the institution than to run away from it. The use of innovative methods in educational institutions has the potential not only to improve education, but also to empower people, strengthen governance and galvanize the effort to achieve the human development goal for the country. Teachers follow innumerable innovative techniques inside the classroom to make the teaching-learning process effective.

Keywords: Learning, Computational Thinking and Adaptive Teaching.

Introduction

Education is a powerful weapon to change the world. Teacher education is the stepping stone in building the future teachers. Innovation is to create something new from the existing one with the aim of novelty and newness in the mind. According to A.P.J. Abdul Kalam, “for participating in the nation building tasks, the capacities required to be built among the students in their formative years by the educational institutions are: the capacity for creating innovation, the capacity for mental leadership, the capacity to uses higher technology”. A broad range of educational innovations—technological, pedagogical, structural, and financial—is playing an increasingly important role in supporting student persistence and degree completion in our national drive to increase postsecondary attainment. Innovative teaching is necessary for the present and future of education to help students to reach their full potential. The individuals responsible for educating young minds at the post-secondary level are rarely provided with formal education on teaching pedagogy and strategies (Hellmann, Paus & Jucks, 2014). Recently, innovative teaching has been viewed as a constructivist, social-constructivist, and student-centered process whereby students should be active learners in a supportive environment, engaging in authentic and relatable problem-solving activities to stimulate learning (Brandon, 2004).

Innovative Practices for Modern Pedagogy

Crossover learning

Learning in informal settings, such as museums and after school clubs, can link educational content with issues that matter to learners in their lives. Learning in schools and colleges can be enriched by experiences from everyday life. An effective method is for a teacher to propose and discuss a question in the classroom, then for learners to explore that question on a museum visit or field trip, collecting photos or notes as evidence, then share their findings back in the class to produce individual or group answers. These crossover learning experiences exploit the strengths of both environments and provide learners with authentic and engaging opportunities for learning. Since learning occurs over a lifetime, drawing on experiences across multiple settings, the wider opportunity is to support learners in recording, linking, recalling and sharing their diverse learning events.

Learning through Argumentation

Students can advance their understanding of science and mathematics by arguing in ways similar to professional scientists and mathematicians. Argumentation helps students attend to contrasting ideas, which can deepen their learning. It makes technical reasoning public, for all to learn. It also allows students to refine ideas with others, so they learn how scientists work together to establish or refute claims. Teachers can spark meaningful discussion in classrooms by encouraging students to ask open-ended questions, re-state remarks in more scientific language, and develop and use models to construct explanations. Professional development can help teachers to learn these strategies and overcome challenges, such as how to share their intellectual expertise with students appropriately.

Incidental Learning

Incidental learning is unplanned or unintentional learning. It may occur while carrying out an activity that is seemingly unrelated to what is learned. Early research on this topic dealt with how people learn in their daily routines at their workplaces. For many people, mobile devices have been integrated into their daily lives, providing many opportunities for technology-supported incidental learning. Unlike formal education, incidental learning is not led by a teacher, nor does it follow a structured curriculum, or result in formal certification. However, it may trigger self-reflection and this could be used to encourage learners to reconceived

Context-Based Learning

Context enables us to learn from experience. By interpreting new information in the context of where and when it occurs and relating it to what we already know, we come to understand its relevance and meaning. In a classroom or lecture theater, the context is typically confined to a fixed space and limited time. Beyond the classroom, learning can come from an enriched context such as visiting a heritage site or museum or being immersed in a good book. It follows that to design effective sites for learning, at schools, museums and websites, requires a deep understanding of how context shapes and is shaped by the process of learning.

Computational Thinking

Computational thinking is a powerful approach to thinking and problem solving. It involves breaking large problems down into smaller ones (decomposition), recognizing how these relate to problems that have been solved in the past (pattern recognition), setting aside unimportant details (abstraction), identifying and developing the steps that will be necessary to reach a solution (algorithms) and refining these steps (debugging). Such computational thinking skills can be valuable in many aspects of life, ranging from writing a recipe to share a favorite dish with friends, through planning a holiday or expedition, to deploying a scientific team to tackle a difficult challenge like an outbreak of disease.

The aim is to teach children to structure problems so they can be solved. Computational thinking can be taught as part of mathematics, science and art or in other settings. The aim is not just to encourage children to be computer coders, but also to master an art of thinking that will enable them to tackle complex challenges in all aspects of their lives.

Learning by Doing Science (with remote labs)

Engaging with authentic scientific tools and practices such as controlling remote laboratory experiments or telescopes can build science inquiry skills, improve conceptual understanding, and increase motivation. Remote access to specialized equipment, first developed for scientists and university students, is now expanding to trainee teachers and school students. Remote lab systems can reduce barriers to participation by providing user-friendly Web interfaces, curriculum materials, and professional development for teachers.

With appropriate support, access to remote labs can deepen understanding for teachers and students by offering hands-on investigations and opportunities for direct observation that complement textbook learning. Access to remote labs can also bring such experiences into the school classroom. For example, students can use a high-quality, distant telescope to make observations of the night sky during daytime school science classes.

Embodied Learning

Embodied learning involves self-awareness of the body interacting with a real or simulated world to support the learning process. In embodied learning, the aim is that mind and body work together so that physical feedback and actions reinforce the learning process. Technology to aid this includes wearable sensors that gather personal physical and biological data, visual systems that track movement, and mobile devices that respond to actions such as tilting and motion. This approach can be applied to the exploration of aspects of physical sciences such as friction, acceleration, and force, or to investigate simulated situations such as the structure of molecules.

Adaptive Teaching

All learners are different. However, most educational presentations and materials are the same for all. This creates a learning problem, by putting a burden on the learner to figure out how to engage with the content. It means that some learners will be bored, others will be lost, and very few are likely to discover paths through the content that result in optimal learning.

Adaptive teaching offers a solution to this problem. It uses data about a learner's previous and current learning to create a personalized path through educational content. Adaptive teaching systems recommend the best places to start new content and when to review old content. They also provide various tools for monitoring one's progress. They build on longstanding learning practices, such as textbook reading, and add a layer of computer-guided support. Data such as time spent reading and self-assessment scores can form a basis for guiding each learner through educational materials. Adaptive teaching can either be applied to classroom activities or in online environments where learners control their own pace of study.

Analytics of Emotions

Automated methods of eye tracking and facial recognition can analyze how students learn, then respond differently to their emotional and cognitive states. Typical cognitive aspects of learning include whether students have answered a question and how they explain their knowledge. Non-cognitive aspects include whether a student is frustrated, confused, or distracted.

More generally, students have mindsets (such as seeing their brain as fixed or malleable), strategies (such as reflecting on learning, seeking help and planning how to learn), and qualities of engagement (such as tenacity) which deeply affect how they learn. For classroom teaching, a promising approach is to combine computer-based systems for cognitive tutoring with the expertise of human teachers in responding to students' emotions and dispositions, so that teaching can become more responsive to the whole learner.

Stealth Assessment

The automatic data collection that goes on in the background when students work with rich digital environments can be applied to unobtrusive, 'stealth', assessment of their learning processes. Stealth assessment borrows techniques from online role-playing games such as World of War craft, in which the system continually collects data about players' actions, making inferences about their goals and strategies in order to present appropriate new challenges.

This idea of embedding assessment into a simulated learning environment is now being extended to schools, in topics such as science and history, as well as to adult education. The claim is that stealth assessment can test hard-to-measure aspects of learning such as perseverance, creativity, and strategic thinking. It can also collect information about students' learning states and processes without asking them to stop and take an examination. In principle, stealth assessment techniques could provide teachers with continual data on how each learner is progressing.

Conclusion

In conclusion, teaching innovatively does not require that you reinvent the wheel. By committing to listening to your students, providing opportunities for real-life learning, fostering creativity and making the material meaningful to them, you will achieve the implementation of innovative practices in your classrooms. Some *innovative* ideas that will help *teachers* reinvent their *teaching* methods and make their classes interesting.

Reference

Umadevi, *M.R.*, *Prashant A. Rudragoudar*. Innovative pedagogical approach for an engaging classroom. *Journal of Edutrat*. Vol. 14(6), 9-11.

Marlow Ediger. *Innovation in a Technological Age curriculum*. *Journal of Edutrat*. Vol. 16(5), 5-6

<http://carleton.ca/tausport/2015>.

<http://digitalcommons.unl.edu/>

<http://www.teachthought.com>>the future of learning.