

Editorial

Techniques of Teaching to Achieve the Highest Educational Outcomes in Medical Education

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Techniques of Teaching to Achieve the Highest Educational Outcomes in Medical Education

Teaching is a human deal connecting the teacher, the learner and the learning group that create a dynamic relationship to bring anticipated change in the behaviour of learner¹. The purpose of teaching is to provide opportunities for learning². In education, medical education particularly, teaching-learning method includes an active process involving both teachers and students with an aim to produce physicians having adequate knowledge, skills with an attitude to serve the patients and families³. Medicine is a profession that requires high standards of behaviour and leadership skills⁴. The field of medicine is continuously changing with its advancement in terms of basic, clinical or technological sciences⁵. Therefore, teaching in medical education is an ever-evolving processes which is refined from time to time to meet the students need⁶. Medical education has changed from a teacher-centred approach to a student-centred approach⁷. The role of teacher is to facilitate students to (i) gain and use knowledge (ii) attain skills (iii) create habits and (iv) advance attitudes. Learning of students encompasses active involvement of students and teachers for an effective knowledge sharing. The teachers actively engage the learners in learning activities that enables them to acquire knowledge, skills and attitude⁸. The creation of a non-

threatening collaborative learning environment is of utmost important for teachers⁹.

Student centered learning promote problem solving, decision making and able to meet the goal and achieve the competencies. In medical schools, active teaching-learning strategies facilitates the development of analytical approaches to a problem and by active participation of students, it is solved. The interactive teaching learning methods includes pre-decided learning objectives to achieve the specified competencies¹⁰. Didactic lectures are the most common traditional method of teaching practice where the students take passive role by listening and taking note and the teacher teaches large amounts of information conducted in a teacher centered class room setting¹¹. Current medical education embraces techniques of teaching such as: Problem based learning (PBL), Evidence based medicine (EBM), Case based learning (CBL), Simulation based learning (SBL), Social media and Video lectures (e-learning), Peer assisted learning, Observational learning, Flipped classroom and Team-based learning⁵.

Teachers with appropriate skills and qualifications for teaching are necessary to cope with the changing higher education curricula to address the expanded scope of knowledge, educational technologies, and active teaching approaches¹². In this paper, we highlighted the techniques of teaching that can be employed by the teachers to achieve highest educational outcomes.

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Among different teaching models, Gagne's model is one of the most commonly used effective teaching model. Robert Gagne¹³, a renowned educationist has developed the instructional theory for the systematic approach of instructional design. He categorised five outcomes to be achieved which are: verbal information, intellectual skills, cognitive strategies, attitudes, and motor skills with the use of Gagne's nine events of instruction¹⁴. The set of instructional

events in Gagne's model consists of nine activities which are (1) Gaining attention, (2) Informing the learner of the objectives (3) Stimulating recall of prerequisite learning (4) Presenting the stimulus material (5) Providing learning guidance (6) Eliciting the performance (7) Providing feedback (8) Assessing the performance (9) Enhancing retention and transfer^{13,15,16}. Table-1 showed the Gagne's nine events of instruction.

Table1: Gagne's Nine Events of Instruction

Gagne's events of instruction		Activity	Example
1.	Gaining attention.	Introductory session: to gain the learner's attention at the beginning of the session and to keep the attention throughout the teaching. Acquiring new knowledge is an ongoing process and attention needs to be focused on what is to be learned using multimedia to display photographs, pictures, and sound.	By gesturing or speaking loudly, starting session with thought provoking questions, showing interesting visual images, playing videos, storytelling, throwing a challenge, or by any other innovative activities relate to topics of learning. It is important to display enthusiasm and friendly appearance to show positive attitude towards students to get their attention.
2.	Informing the learner of the objective.	Objectives are statements of desire, expected to be achieved by the learners at the end of a teaching session. At the beginning of teaching session, learning objectives need to be informed to the learners by the teacher.	By informing the learning objectives, learners know the expectation and can sort important from unimportant materials which motivates them to complete the learning. Objectives also helps the teachers to ensure their teaching are in the right direction.
3.	Stimulating recall of prerequisite learning.	It provides a linkage between old and new learning and boosts the learning process and enhance the retention and transfer of knowledge. All new learnings are shaped based on what is already known.	Starting the topic with a relevant problem, asking questions about previous experiences on the topic, create a story or scenario describing learner's expected knowledge that links the prior knowledge with the new, determining what the learners already know while presenting the new content.
4.	Presenting the stimulus material.	Here, the new content is presented; teaching materials should be organised meaningfully, presented in a systematic way with proper explanation and highlighting key points to focus attention on the relevant information to be learned.	To deliver contents, videos, audios, stories, images, examples or simulations are extensively used nowadays. Whatever the method apply, the content should be organized and break into pieces in a meaningful way.
5.	Providing learning guidance.	Here, teacher provides learning guidance by showing appropriate actions about how to do or carry out a task which is directive rather than illustrative with suggestions.	The support may be of scaffolding, hints, feedback, concept mapping, role playing, visualizing etc. The purpose of this event is to show the learners what appropriate action constitutes correct performance.
6.	Eliciting the performance.	Eliciting performance means providing practice opportunities to the learners or allowing students to apply knowledge and skills learned. The emphasis in this event is on learning, and not testing.	This event is treated as practice event. Here, the learner is required to practice the new skill and performing this step confirms the correct understanding of the learners about the skill.
7.	Providing feedback about performance correctness.	Immediate feedback to be provided to the learners while performing the task, so that the learners can confirm the correctness or accuracy of their performance.	Any question raised by the learners can be answered at that time. Feedback may be as brief as saying "correct" or "wrong" but it may include hints, explanations, or suggestions. Non threatened learning environment must be ensured while providing feedback about performance correctness.
8.	Assessing the performance.	Here the learner demonstrates the procedure without any guidance or hints and assessment is done.	Tests used to assess overall learning. Here, assessment is guided directly by the objective with the help of a checklist.
9.	Enhancing retention and transfer.	Retention and transfer are promoted by the stimulus materials and examples presented and the amount and kind of practice provided. Transfer of knowledge refers to applying it in settings and situations different from those in which it was learned.	Procedural proficiency can be enhanced by practicing logbook, spaced reviews and further supervision. Repetition of learned concept is an effective way to enhance retention.

Gagne's nine events of instruction, is an effective and systematic approach to ensure an effective teaching learning program. It has been widely used for procedural skill education^{15,17} as well as

teaching knowledge or non-procedural skills¹⁶.

The purpose of gaining attention, informing the learner of the objective and stimulating recall of prerequisite learning (event 1,2,3) actually

prepare the learners for instruction. Presenting the stimulus material (event 4) and providing learning guidance (event 5) start the actual teaching-learning process and heavily entangled in practice. Eliciting the performance (event 6) and providing feedback about performance correctness (event 7) enhances the learning by practice opportunities and feedback. Event 8 assess the performance guided directly by the objective and event 9 enhance retention and transfer by reviewing and summarizing.

Teaching is the only profession that creates all other profession¹⁸ and it is a multifaceted difficult task. Teachers are one of the important elements in the whole process of education. So, effective teacher education ensures the quality of education¹⁹. High quality teaching especially in medical education institutions is vital to produce high-quality medical professionals and thereby to ensure high quality medical services. To achieve the highest educational outcomes in medical education, the medical teacher needs to make the teaching in an organized fashion keeping in mind the constructive alignment shaping objectives, deciding objectified content, selecting appropriate methods of delivery and ensuring assessment guided by the objectives as well as the sequences of events of instruction.

Teacher needs to apply the most effective techniques of teaching which are: talk to students, talk with students, have them talk together, show them how, supervise and provide opportunities for practice in line with Gagne's nine events of instruction. An effective teaching, requires the teachers to be flexible, energetic with full commitment within the busy schedule of teachers. They need to be fully aware about the learners' need, their learning styles and approaches²⁰.

Conclusion

Teaching is a multifaceted human interaction involving the teacher, the learner and the learning group in strength of dynamic relationship aimed to bring expected change in the behaviour of learner. The role of teacher is to provide opportunities for learning which is not an easy task. Gagne's nine events of instruction is considered as the best teaching techniques to provide learning opportunities and can be applied by the teachers to achieve the highest educational outcome. The teachers must understand the process of teaching-learning and learning environment. In summing, a well-planned teaching session starts with introductory session with clear achievable objectives within the time frame and considering the background knowledge of the students. This is to be proceeded by presenting the main part or body of information with relevant examples, with the use of appropriate media and keep actively engaging the learners in the session. The final part is finishing the presentation by summarising the main points and timely finishing the session with suggesting further readings.

This paper offers a window for educators around the globe to ensure the best teaching techniques in their teaching in order to achieving highest educational outcome.

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