

55. Teaching Strategies to Improve Learning Outcomes

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The primary duty of every teacher is teaching. Secondary responsibility is research. In order to facilitate teachers to improve their academic and research output they should be relieved from any kind of clerical activity. Infrastructure should be put in use to save time and make grant of permissions and approvals online wherever possible. Paper work should be totally removed for routine activities like approval of leave letters, permission letters, etc., all of which can be facilitated online. Although many top institutions in India have such facilities already, there are several others without the same.

Basic student psychology courses can be made mandatory for young teachers. This would enable them to understand students better which would otherwise be possible only with many years of experience. Atleast once in every academic year, faculty should be given a platform to interact with the prospective employers of the students in the relevant subjects. This would keep the academia updated on the requirements and expectations of the industry. Industry academia gap should be bridged so that the employability of the students is maintained high. Annually, a one-week programme like an academic

symposium can be held at a national level involving teachers from different specialisation streams in India like Chemical Engineering, Civil Engineering or Biomedical Engineering where teaching methodologies and subject contents are discussed and developed to meet both the industrial and world requirements. Professors from top universities in the world can also be invited to give their valuable inputs so that in the long run the academic standards in India can match well with the standards of world's top universities.

The old and famous teaching methodology in India was the gurukul system. The knowledge that the students gained residing with their gurus and serving them were far more wholesome than what students gain in today's class room teaching.

The best feature of the Gurukul system was that, apart from gaining knowledge, life skills were honed and moral values were inculcated in students which is almost absent these days. What is heard is easily forgotten; what is seen is better remembered but what is performed or experienced lasts for a lifetime. In the gurukul system, even a complex philosophy would be easily taught using suitable examples, most often drawn from nature. Personality development was also an integral part of the gurukul system. Ancient India was an abode of several great Indian scholars who were pioneers in the field of Mathematics, Science, Medicine, etc., which proves that the system of education then, in India was unparalleled. One reason that can be attributed to such excellence in teaching-learning and

character-building is that the ancient teachers truly practised what they preached. This enabled students to easily grasp complicated ideas and also acquire good traits. In the current scenario of Industry 4.0, ethics is the only USP (Unique Selling Proposition) that human beings have compared to AI (Artificial Intelligence) machines. No teaching methodology would be complete if it does not have a moral value addition. Positive qualities like discipline, honesty, etc., should be duly appreciated and negative qualities like lack of punctuality, disobedience, etc., should be corrected and not neglected.

It is important that there is a practical part to any subject where students are exposed to hands-on learning in at least few important aspects of the subject. Group activities should be encouraged so that teamwork skills are also improved. Mini project for every course can be planned so that there is something that a student experiences in every course he/she takes which remains with him/her forever. Animation, videos and working models are great ways of imprinting students' minds with the content of a course. Such means cater the reach of subject content to a larger number of students including slow and passive learners.

The teaching methodology should be crafted such that every student looks forward to attending classes and starts developing affinity towards the subjects. A specified percentage of assessment should be given for out-of-the-box thinking. The percentage of assessment based on rote learning should be gradually reduced and completely eradicated over a period of

time. Challenging assignments, open-ended questions, mini projects that are socially relevant or has some kind of a research or commercial potential are a few ways of inducing creative thinking in students. The creativity of a teacher along with sound knowledge in the subject that he/she handles, plays a major role in initiating creative thinking in students. Teaching and learning should go beyond semester examinations and internal assessments so that whatever is learnt could be utilised for the betterment of our society and development of our country. Education should make every student more humane, sensitised to environment and to our nation at large. Every teacher should be passionate about teaching. This would motivate a large percentage of students to develop an interest in the subject. Every teacher should develop a good rapport with the students so that no student hesitates to clarify even the silliest of doubts he/she has. In the teaching learning process, the content sent across by the teacher should be received by the students. For the smooth rendition and reception of subject content, there should be no mental blocks for teacher and the students. Only then holistic knowledge-building can take place. The minds of students are like plain canvases, each with a different texture. It is upto the teachers to identify what kind of paints and colours are best suited to each texture in order to paint the same picture. A very high percentage of Indian population is youth. So every Indian teacher should take it upon himself/herself to produce not only the best professionals but also good citizens.