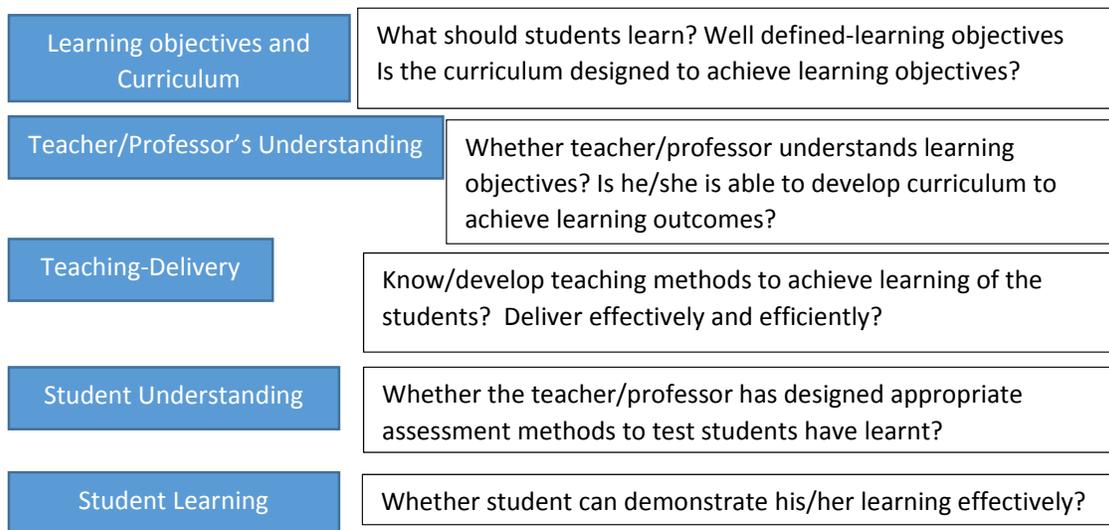


Teaching, Learning and Understanding

In India, at the Central Government level, the ministry of Human Resources Development (MHRD), and at the State level, Ministry of Primary and Secondary Education, and Ministry of Higher Education are responsible for providing formal education to students. However, the medical education and law education come under respective ministry.

The education is imparted through Schools, Colleges and Universities owned either by Central, State or Private Societies. In each School or College or University, the set curriculum is taught by teachers as per a planned time table. The curriculum contains both knowledge and skill to be imparted to the students. The teachers impart knowledge through a series of lectures and skills through a number of laboratory sessions. It is expected that the students acquire the relevant knowledge and skills by attending the lectures and laboratory sessions. At the end of academic term the students are examined for their learning through written and laboratory examinations conducted in a well-scheduled manner and the certificates are issued by relevant board or university to successful candidates. The examination papers have been standardised over the years. Normally, the written examination is for a duration of 3 hours, and the students are required to answer 5 full questions, each of 20 marks out of the eight questions asked. When a new course or a programme is created, in the first two years, the teachers, standardise the questions to be asked in the examination, sometimes, they would even create a question bank encouraging rote learning leading to a heaven for teachers and students and many stake holders. The rote learning kills students' creativity and is the main cause for unemployability of graduates.

In the recent past, world over the educationists are experimenting to evolve best teaching and learning practices and the following diagram approximately represents their views.



There are three important words that I have used here-Teaching, Learning and Understanding. Let me dwell on these three words;

To teach is to impart knowledge or skill; teaching demands teacher

- 1 To have clear understanding of the learning outcomes his/her students must achieve
- 2 To be able to develop curriculum to achieve those learning outcomes

- 3 To develop teaching methods to deliver curriculum
- 4 To organise and use educational technologies
- 5 To design and implement assessment methods to test learning

For teacher to meet these demands, requires a strong systemic support.

Learning is the act of acquiring knowledge, skills, behaviours, values and even involves synthesizing different types of information. Learning is a process and everybody possess a learning curve. Learning can be enhanced through experience and learning produces changes. Learning needs commitment of the learner. The act of memorization based on repetition is rote learning and this type of learning may not produce any changes in the learner. As per Nourma Fauziyah, "Learning is not just knowing what to do, but doing what we already know..."

Learning should lead to understanding. Understanding is about taking knowledge and skills and making meaning with them. Understanding requires developing meaningful relationships between teaching and learning. Understanding is transferable- one can take an understanding and apply it to different situations, events, ideas and make meaning even when the facts are different. This usually relates to "why" questions. The following table helps to establish relationship between teaching, learning and understanding (<http://tw.aisj-jhb.com/teaching/2012/05/09/what-is-the-difference-between-knowing-and-understanding/>)

Teaching	Learning	Understanding
rhyme is when two words have the same sound	create a rhyme	Rhyme is used because it's pleasing to the human ear
The formula is $E=mc^2$ and $E=$ energy, $m=$ mass and $c =$ the speed of light	Calculating answers using these equations correctly	How the formula relates to the real world and can be used to interpret phenomena
Use the inside of your foot to kick the ball	Being able to kick the ball accurately	How different parts of your foot affect the way the ball moves
Which foods are healthy and which foods are unhealthy	Plan a balanced diet	Healthy foods make our body feel better and allow us to live a better life
chronology of events in the first world war	Critical interpretation of primary historical documents	Presentation of historical events is determined by the people who write them

Understanding of academic content is essential for development and growth of a student. Learning of academic content leads to understanding. The student centric education enhances student learning. The learning can be enhanced through innovative teaching and assessment methods. In summary, teaching leads to learning; learning leads to understanding; Understanding triggers thinking; Thinking leads to creativity; Creativity leads to development of knowledge Society.

Prof. S.R. Shankapal