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Flipped Class Model – A New Learning Pedagogy inIndian Education System

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Abstract –Proper teaching-learning process of inculcating Cognitive teaching is to be adopted in order to stimulate the thought process and to develop student's cognitive abilities, which, in turn, will improve their learning capacity. Once the teaching-learning process is set for delivering the higher order thinking contents then the evaluation of the students is a challenge. Flipped class room is a model by which we can convert teacher-centric teaching learning process into student-centric teaching learning process. In flipped class students have the choice to learn when and where the basics of the subject as per their convenience.

Keywords:teaching-learning, Cognitive, higher order thinking, flipped class

1. Introduction to Bloom's Taxonomy

In 1956, a group of educational phycologists headed by Benjamin Bloom developed a system to classify the learning behaviour of learners.This classification system referred as "Bloom's Taxonomy"[1].The word Taxonomy means "Classification or Structure". The Bloom's Taxonomy classifies learning goals into one of the categories from Knowledge to Evaluation as shown in Fig. 1[2].The basis of the pyramid is Knowledge, the first level of learning. Above it lies Comprehension, Application, Analysis, Synthesis and Evaluation. Each level above builds upon the one below, so you can only move up the pyramid one step at a time[3].

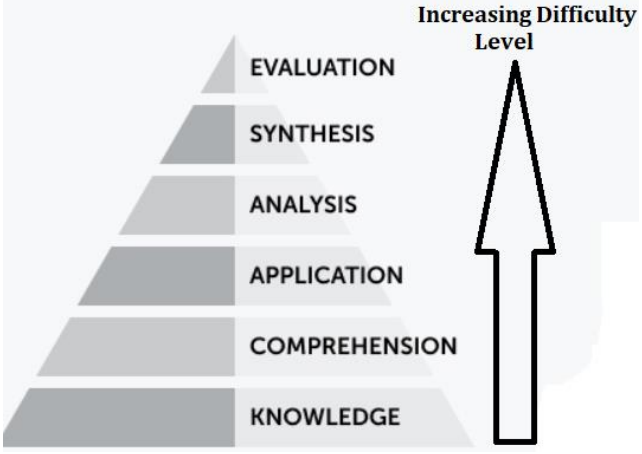

Fig. 1: Different Learning Levels in Bloom's Taxonomy

2. Introduction to Revised Bloom's Taxonomy

In 1990, a group of cognitive phycologists headed by Lorin Anderson revised the Bloom's Taxonomy and it is referred as "Revised Bloom's Taxonomy"[4].The Revised Bloom's Taxonomy (RBT) classifies learning goals into one of the categories from Remember to Createas shown in Fig. 2.The basis of the pyramid is Remember, the first level of learning. Above it liesUnderstand, Apply, Analysis, Evaluate and Create. Each level above builds upon the one below, so you can only move up the pyramid one step at a time.

If we are trying to teach people without identifying educational objectives the there is ample probabilitythat we may not get good results in terms of learning of our students. To avoid that, we have to clarify our instructional goals using Revised Bloom's Taxonomy. The "Revised Bloom's Taxonomy" can be used for:

(A) Alignment of curriculum planning

(B) Instructional delivery

(C) Assessment

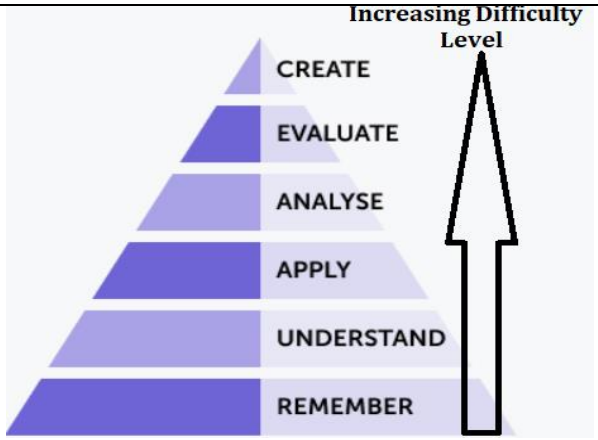

Fig. 2: Different Learning Levels in Revised Bloom's Taxonomy

3. Understanding Revised Bloom's Taxonomy Levels

Let's take a closer look at each learning stage. The Revised Bloom's Taxonomy recommends reading the name of each learning category as though preceded by the phrase "The student is able to…".

For example, The student is able to Remember the capitals of countries, The student is able to Create dialogues for English movie, etc;.

Table 1, shows the what is supposed to be measured in a particular learning level and what types of questions can be framed for a particular level during assessment[5].

Table 1: Learning level, Measurement and Question framed

Levels	Measurements	Question framed
Remembering	Can the learner recall or remember the information?	List different types of fruits.
Understanding	Can the learner explain concepts?	Explain why they are classified as fruits.

Applying	Can the learner use the information in a new way?	Diagram the parts of your favourite fruit.
Analyzing	Can the learner differentiate between the various parts or components?	Compare the characteristics of each fruit that make it different from the others.
Evaluating	Can the learner justify a decision	Determine and justify which fruits are the healthiest.
Creating	Can the learner create a new product, generate a new idea or a different thought process?	Create a drink using three fruits that would be considered extremely healthiest.

4. Flipped Class Model – A Learner-Centric Approach

The remember and understand levels are considered as lower order thinking levels and sometimes apply level can also be considered as lower order thinking level. But many times apply level can be considered as higherorder thinking level.

Generally apply, analyse, evaluate and create are considered as lower order thinking levels. The instructional delivery and the assessment of a learners higher order thinking levels is a key challenge for the teacher.

If we talk about the colleges and universities in India then it is observed in the entire length and breadth of country that the levels in attitude and learning capability of students in a class have huge variation. Due to this a teacher faces huge challenge in delivering the lecture. If a teacher maintains the pace of his lecture slow by keeping in mind slow learners then sharp brained students feel bore in the class and if teacher increases the pace of his lecture then slow learners may feel difficulty in learning the concept.

To handle the above mentioned problem we can adopt flipped class concept. Flipped class is not a new concept rather it is being used in few colleges/universities[6]. But still it is a new and fresh idea in the scenario of Indian education system.

Normally in class room we deliver the lecture and for home work we give assignment to the students on the basis of our lecture. But if we reverse the process in which students come to the class after going through the topic by reading books or watching videos and in class we discuss some of the applications and in-depth of the topic which students already studied in their home then we can say we have flipped the class. Flipped class room is a model by which we can convert teacher-centric teaching learning process into student-centric teaching learning process. In flipped class students have the choice to learn when and where the basics of the subject as per their convenience. Whereas in class room teacher can deliver the topics in greater depth.

5. Requirements for Flipped Class

The requirements for conducting flipped class room model[7] are summarized as follows:

(i) A teacher must have good command in the subject which he is going to deliver in flipped class model.

(ii) The teacher must prepare a handout of the subject which clearly mentions the learning resources for each topic in the syllabus. Learning resources can be the text books, videos or web resources. It will be better if teacher record his own lectures and make it available to the students before the start of course. In his own video lectures teacher can customise it as per the requirement of the subject for flipped class.

(iii) The ideal number of students for flipped class should not be more than thirty.

(iv) The duration of class should be two hours so that teacher can go in-depth of the topic which students have already studied.

(v) In almost all engineering subjects many software are available for simulation and learning of concepts. So it is required that students must have laptops with required software or class should be conducted in computer lab.

(vi) To make class more interactive teacher should use Lab-Taken-To Class (LTC) model. In LTC model after delivering in-depth in a topic for about 30 minutes some short problem should be given to students. Now student will solve the problem in their laptop by using related engineering software. The problem is selected in such a way that it can be solved in 10 to 15 minutes.

(vii) Teacher should prepare 10 to 15 questions for each week covered syllabus so that on the last day of the week he can access the students how they understand the topics by asking them to solve the questions. Questions can be multiple choice based or different depending upon the subject.

(viii) Here it is important that we should not force a teacher to adopt flipped class model unless he is confident about his skill set and knowledge. At the same time we should not force this model to all students. It is preferable we should explain the flipped class model to students and whoever are interested to take the subject in flipped class model can enrol in the class.

References

[1] Bloom, B. S.; Engelhart, M. D.; Furst, E. J.; Hill, W. H.; Krathwohl, D. R. (1956). Taxonomy of educational objectives: The classification of educational goals. Vol. Handbook I: Cognitive domain. New York: David McKay Company.

[2] Bloom et al. 1956, p. 4: "The idea for this classification system was formed at an informal meeting of college examiners attending the 1948 American Psychological Association Convention in Boston. At this meeting, interest was expressed in a theoretical framework which could be used to facilitate communication among examiners.

[3] Hoy, Anita Woolfolk (2007). Educational psychology (10th ed.). Boston: Pearson/Allyn and Bacon. pp. 530–531, 545. ISBN 978-0205459469.

[4] Anderson, Lorin W. &Krathwohl, David R. (2001). A Taxonomy for Learning, Teaching and Assessing: a Revision of Bloom's Taxonomy. New York. LongmanPublishing.

[5] Anderson, L. W. and Krathwohl, D. R., et al (Eds..) (2001) A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives. Allyn & Bacon. Boston, MA (Pearson Education Group).

[6] Freeman, S., Eddy, S.L., McDonough, M., Smith, M.K., Okoroafor, N., Jordt, H., Wenderoth, M.P. (2014). Active learning increased student performance in science, engineering, and mathematics. Proceedings of the National Academy of Sciences, 111, 8410-8415.

[7] McLaughlin, J. E., et al (2014). The flipped classroom: a course redesign to foster learning and engagement in a health professions school. Academic Medicine, 89(2), 236-243.