

Six C's for effective teaching

Dr. Radhika Devi V¹

¹Department of Science and Humanities, MLR Institute of Technology, An Autonomous Institution, Affiliated to JNTUH, Hyderabad, T.S., India.

¹hodhumanities@mlrinstitutions.ac.in

Abstract: A typical college teacher preparing a course content, spends years in teaching but spends no time on development of teaching skills. When teachers think that the best way to improve their teaching is achieved only by developing their content knowledge, end up with 50% of imparting the subject knowledge. To think that content, matters more than teaching skills, is to imagine that the car is more important than the road. But both are essential. What we teach and how we teach are inextricably linked and are very much dependent on one another. Even though both are tightly linked, development of the one doesn't automatically improve the function of the other. So far no specific attention is paid to certain of the basic requirements to achieve 100% effective transfer of knowledge. This article identifies a set of six C's, (Content, Communication, Confidence, Critical thinking, Collaboration, Creativity) for effective teaching to move from LOTS (Lower Order Teaching Skills) to HOTS (Higher Order Teaching Skills).

Keywords: Bloom's taxonomy, Lower Order Thinking Skills, Higher Order Thinking Skills

Introduction:

We are living in an innovation-oriented society that demands creativity through integration of knowledge at global level. Education is the key to success of any individual and in turn to the nations. There are serious gaps between the industry requirements and the skills offered by engineering colleges. Students need to be better prepared with competence, and critical thinking skills required to solve problems and generate technological breakthroughs if the nation is to remain a global economic leader. Many workshops were conducted on "how engineering education must change in the light of changing workforce demography and the needs". There is already a focused high level of attention from a variety of sources to improve engineering education.

Among all educational resources—teachers' abilities are crucial contributors to students' learning. For effective teaching a teacher must know the "tricks of the trade" (skills to efficiently construct and manage classroom activities, and communicate well [1]).

Some facts about teachers and teaching:

Quality education is an important strategy in our nation's education. Teachers, especially college and university teachers are the main force of imparting quality education. [2] Thus, college and university teachers have to alter their teaching notion and teaching methods. It must be understood that:

- Teaching is a **process** not an event.
- There is not only one right way to teach, but there are **many** ways to teach better.
- Both teachers **AND** students are **responsible** for learning.
- Learning is more likely to occur if the process has been **planned**.
- Assessment **drives** learning.
- Learning occurs best in a **relevant** context.

Blooms taxonomy was originally designed for assessment, but it also laid foundation for developing the learning objectives. The taxonomy influenced practitioners to think about objectives of teaching.

Moving from Lower Order Teaching Skills (LOTS) to Higher Order Teaching Skills (HOTS):

Dr. Radhika Devi V¹

¹Department of Science and Humanities, MLR Institute of Technology, An Autonomous Institution, Affiliated to JNTUH, Hyderabad, T.S., India.

¹hodhumanities@mlrinstitutions.ac.in

Although many workshops and conferences focused on the desired learning outcomes and what to expect from students in terms of types of learning yet less is focused on requirements for effective teaching. Many a time the teachers are just ignoring some of the very important qualities, which one should have to effectively transfer the

knowledge (subject) to the students. So far no specific attention is paid to certain of the basic requirements to achieve 100% effective transfer of knowledge. The six C's that complement the objectives are Content, Communication, Confidence, Critical thinking, Collaboration, Creativity

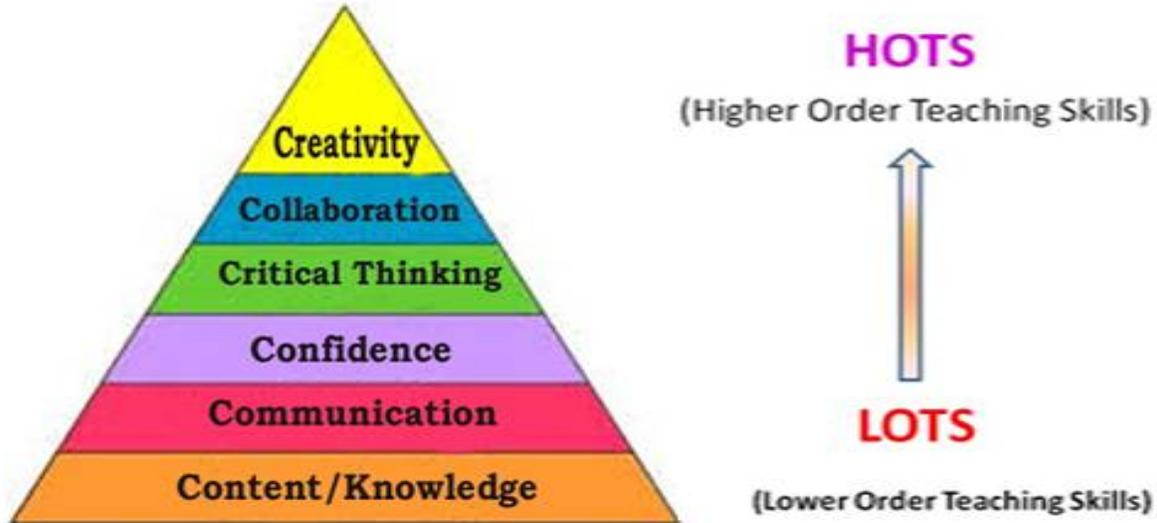


Fig:1 Teaching Taxonomy

Higher- order teaching skills are reflected by the top three levels- namely, *critical thinking, collaboration, creativity*. Lower-order teaching skills are reflected by the lower three levels- namely, *content, communication, confidence*.

A teacher must be capable of the transferring the knowledge in a way that allows students to understand and retain what is being taught. .

Thus teaching is believed to be most effective when it consists of clear verbal explanations of routines, procedures and concepts. In his early review of the literature, Hanushek (1986, p. 1164) concluded that “the closest thing to a consistent finding among the studies, is

First C - Content (Knowledge):

Content (Subject) knowledge is a significant factor throughout the teaching process. Good subject knowledge is crucial in designing tasks and resources or presenting information or asking questions or giving formative and summative feedback.

Shulman provides a list of the different kinds of knowledge that a teacher needs in order to teach effectively [3]. Content knowledge is placed first, as several of the other areas of knowledge depend on it.

In the process of effective teaching the content knowledge needs to be addressed first since it makes little sense to consider student learning of the content before the teachers themselves understand it.

that ‘smarter’ teachers who perform well on verbal ability tests, do better in the classroom”.

Apart from verbal communication usage of visual aids like overhead projectors, smart boards etc. play a vital role in providing a concrete support for concepts and ideas.

Second C - Communication:

Scholars of NCATE in their research recognize that content knowledge alone does not adequately prepare teachers for the challenges they face in today’s classrooms.

In monitoring the student progress, effective communication between the teacher and the student is essential- whether it is verbal or visual.

Third C - Confidence :

Teachers have to be self confident about what they do and competent in what they do [4]. Both these can be achieved if one takes care of the preceding 2 levels. i.e. content and communication.

Gaining self-confidence and developing one’s teaching ability are closely related and working on either concern leads to improvement on the other [5].

It is observed that most of the class room teachings have these first 3 C's in common, that are considered as Lower-order teaching skills (LOTS).

Fourth C - Critical Thinking:

The first step to move towards Higher Order teaching skills is critical thinking.

Critical thinking is the ability to think clearly and rationally about what to do or what to believe. It includes the ability to engage in reflective and independent thinking. Someone with critical thinking skills is able to understand the logical connections between ideas. Teaching the ability to think critically is a primary goal of education.

"Teachers cannot push students to think more deeply unless they do so themselves."[6]

An exploratory attitude towards teaching helps to prevent the feeling of being stuck in a rut, i.e. working on the same teaching points in the same way year after year.

Fifth C -Collaboration:

Teachers who have consistent opportunities to work with effective colleagues also improve in their teaching effectiveness [7]. Traditionally, teachers collaborate horizontally, with other teachers in their same grade level or subject area department. But they also have to connect vertically with different subject teachers to embrace wider knowledge which makes one to become versatile teacher.

For example if a teacher is supposed to teach about a topic on Laplace transform, he would teach only the formulae, but does not teach the application of it. In order to make the topic more interesting and exhaustive, one needs to collaborate with faculty who teach communication engineering since Laplace transforms have major applications in that area.

Sixth C- Creativity:

Creativity is the Highest –Order thinking skill as well the Highest-Order teaching skill.

Introducing more creativity into the classroom and assignments can actually make it a lot more interesting and 'Nurture Creativity in Young People'.

Teachers have a greater impact by creating lessons that "use the various types of intelligence in classroom activities". There is a multitude of opportunities for creative teaching - making connections with information, case studies, exemplar materials, resources and creative practitioners in formal and informal settings

Conclusion:

As classrooms have become increasingly diverse, so too have the challenges for educators. It is not surprising that the success of the program depends on the skill of the teacher. Trying out new ideas in the classroom has the

additional benefit of making the activity of teaching much more interesting. **The premise of Bloom's Taxonomy is that each category (or 'level') must be mastered before progressing to the next.** In a similar way, each level in the six C's for effective teaching have to be mastered before proceeding to the next level.

- Before we can **communicate** a concept we have to **have content (knowledge)** of it.
- Before we can **confidently** speak about the concept we must **communicate** it properly.
- Before we **critically think** about it we must have **confidence** in it.
- Before we can **collaborate** with others we must have **critically** thought about it (**analyzed**).
- Before we can **create** we must have **content, communication, confidence, critical thinking, and collaboration**

References:

1. Journal of Teacher Education, Vol. 57, No. X, Month 2006 1-15
2. [Information Technology and Applications, 2009, IFITA '09. International Forum on](#) (Volume:1). DOI:10.1109/IFITA.2009.372
3. Shulman, L. (1987) Knowledge and teaching: foundation of the new reform. Harvard Educational Review, 7 1, 1-22.
4. Self Confidence for competence by Burnice Milburn Moore.
5. Professional development: teacher development and confidence *By Gerardo Valazza*
6. Embracing Teachers as Critical Thinkers *By David Ruenzel*
Viadero, D. (2009). Top-notch teachers found to affect peers. Education Week. Retrieved September 1, 2009 at
7. <http://www.edweek.org/ew/articles/2009/09/01/03peer.html?tkn=VQJF9Ipv4%2Fm1H05QrumV3xEwIqnZkr5DI8iG>.

About the author:



Dr. Radhika Devi V is an Associate Professor in Physics at MLR Institute of Technology, Hyderabad, Telangana State. She holds a Ph.D. degree in physics from Hyderabad Central University, Hyderabad. She is a recipient of "Swarna Jayanthi

Puruskar” from National Academy of Sciences India (NASI) in 2007 for presenting best research paper on “Electron Correlations in GaAs”. She has published 14 papers in international journals on various topics in computational physics.