Bloom's Taxonomy (Cognitive Domain) in Higher Education Settings: Reflection Brief

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Abstract

The role of taxonomy of objectives is considered to be one of the most imperative elements in curriculum designing and drafting of learning outcomes and objectives. Several educationists and academicians have regarded this model in facilitating learning achievement from lower level knowledge acquisition to higher order thinking. However, a few others have critiqued this phenomenon by reconnoitering its implications on segmentation of knowledge application into a hierarchical model, that may restrict learners, specifically in higher education settings to limit their acquisition of a concept. Moreover, students' learning and motivation are hampered while undergoing such an intensive, structured assessment of those learning outcomes. This reflection brief will appraise and reflect in favour of the various critiques established around the phenomenon of progressive Bloom's taxonomy and will briefly discuss the idea of reversing the level of taxonomy in higher education settings to sustain student learning motivation.

Keywords: Blooms taxonomy, higher education, learning objectives

Introduction

This brief reflection is a literal discourse emerged from a broader umbrella project on learning outcomesfrom the authors. It is also inspired from the two decades of experiences of the principal author, who has worked on critically examining various practices of teaching and learning and their impact on student motivation at higher education levels. Furthermore, the author has executed various projects to redefine quality and learning in higher education setups. This is one of the extracted pieces from a project's reflection log reflecting upon the need of questioningthe application ofBloom's taxonomy (BT) in higher education settings and the need of redefining its alignment for the same. This project is conceptualized to critically appraise various learning outcome designs and their assessment practices at the higher education learning setups that hampers the learner's intrinsic motivation to learn.

The methodology and genre used in the writing of this piece are a critical, reflective analysis, whereby reflections and thoughts are projected to question the entire process of inquiry. The authors in this project are trying to counter question an established theory and critiquing it to the contextual realities to establish a deeper understanding of it in general. This reflection piece ends with a set of questions that will enable the readers to further investigate this phenomenon in their own context.

An analysis of Bloom's taxonomy

Bloom's Taxonomy was primarily conceptualized and presented by Dr. Benjamin Bloom at the start of 1956 (Orey, 2010). Its core purpose was to ensure that learning transforms

into higher levels of thinking, rather than a mere act or process of remembering the facts in a well defined structure.A pyramid was developed to present the learning prototype advancement.The idea of its composition was to aid the writing of learning objectives and course outcomes that are progressively moving into the complexity of learning (Rupani, 2011). The intent was to ensure that learning outcomes were designed in such a manner that enabled the teachers to gradually bring learners from acquiring subject information to its practical application in the real context and ultimately, create meaning of their own from the same (Riazi, 2010).

To date, there have been two models of Taxonomy as shown below: The first one with the original Bloom's taxonomy sturcutre which was presented in 1956 and the second one is the modified one, which was presented in 2001. The first level of both of these are based on knowledge, whereby mere information imparting is focused to ensure that learners should have the knowledge of a phenomenon; the next level is about establishing an understanding of that phenomenon;the third application stage is where the knowledge is applied in the real life context. Then comes the analysis of that phenomenon and how its connections can be made with the other set of information. Once that is done, comes the stage of evaluation to enable learners to evaluate the acquired information with respect to its utilization and critically appraise how it can be modified to suit the need. Lastly, is the stage of creation, which is considered the highest stage of level of achievement, whereby new information or idea is generated based on the experiences of learning from the past levels (Paul, Naik, Rane, & Pawar, 2012).

Figure 1.BT v.1 1956
(Bloom, 1956)

Figure 2.BT v.2 2011
(Komárek & Mareš, 2012)

Bloom's is not the only hierarchical learning scheme in educational psychology that provides the taxonomy of the learning objectives; however, it is the most influential (Callister, 2010). It has been observed that all hierarchical schemes represent an inverted approach, which means that the point of progression is placed at the top level, which in actual should be the point of initiation and at the bottom. Furthermore, these hierarchical models are based on learning that is essential and often nonsensical; determined by the experimenter rather than by the learner, and rely on data collected in controlled experimental conditions (Krathwohl & Anderson, 2010). In the real world, factual learning is the most difficult kind of learning, unless it is embedded in something that is understood

(Kolb D. , 2014). The recall of information is much less efficient than the recollection of situations that were comprehensible. Learners learn through what they do rather than do things as a result of what they know (Boud, 2013; Hyder, 2013). Thus, at the higher level, the learners do not learn from the fellow learners, rather they want to learn by apprenticing themselves (Hyder, 2013; Kolb & Kolb, 2012). They learn when they decide they would like to do something themselves, a judgment that is at the peak of the hierarchy.Problems emanating from the application of Bloom's Taxonomy have further shattered the foundations of our learning system (Mickes, et al., 2010) and even our assumptions about human beings result in the loss of motivation and interest of our learners in studies. Furthermore, on a reflective note:

1. Bell curve evaluation of a student highlights how a child is boxed into a corner by tools like Bloom's Taxonomy and MBTI (Myers Briggs Type Indicator), which destroy the future potential of the child by labeling him (Herrnstein & Murray, 2010).

2. Education as Tazkia: Is a child like a clean slate? Bloom's Taxonomy assumes that a child is like a clean slate which destroys the growth potential of a child before it actually starts (Hyder, 2013).

3. The way our curriculum is designed (from simple to complex) is the exploitationof the intelligence of learners and eventually ends up making them hate every subject that we try to teach them. The more we increase the intensity of our teaching, the more they start hating the subject, whereas the opposing view would have effortlessly enabled them to explore and discover the subject and made them lovers of the subjects that they study (Hyder, 2013; Mahmood, 2010).

4. Holistic learning and whole life orientation arealternative approaches that align with the natural learning process of a learner.

Reflecting upon the context of learning, explicitly in higher education settings, the learnerscomes from the background where they are expected to be facilitated that enables them to constructively generate their ideas and thoughts into the trajectory for life and social development (Kabilan, Ahmad, & Abidin, 2010). Most of the learners in the process of pursuing their higher education, have a clear and defined vision for leading a successful life and career. They also have ideas, concepts and experiences to inform their routine decisions, however, all they lack and look forward is the theory to support their ideas and decisions in the form of knowledge from educational institutions. Such learners, are autonomous and independent having ideas and thoughts of creating a new paradigm of information and innovation of their own and taking it forward to the world. Students in the initial years of their education in the universities come with great zeal and passion to transform their experiences and thoughts into a concrete outcome (Brown, Bull, & Pendlebury, 2013). However, unfortunately it is noticed that in the first few semesters and as they are on the verge of their degree completion, they lose their interest and motivation to learn and shape their experiences into tangible outcomes of their invested time, money and efforts (Eggen & Kauchak, 2011).

Several studies indicate that student motivation plays a vital role in any program success. Student motivation at the higher education level is influenced by the assessment practices of the university, teaching and learning method, the planned trajectory of career choices and intrinsic motivation (Boud, 2013; Herrnstein &

Murray, 2010; Kolb & Kolb, 2012). It was found in various research studies that learning outcomes led assessments are one of the directly correlated factors of learners motivation and learner success in the colleges. Learning in the higher grades is more intrinsic, creative and self initiated. Scheduling adult learners under a hierarchical structured learning can hamper their motivation to learn since most of the assessment is carried out based on the objectives designed for a particular course (Mickes, et al., 2010; Paul, Naik, Rane, & Pawar, 2012; Rupani, 2011).

Smith (1986) established a thorough critical appraisal on learning and Bloom's taxonomy. In the book he details the concept of how learning is taken for granted by the educational institution and critiques a systematic and structured way of approaching teaching and learning for the same. In one the excerpts from his book he states,

"The myth is that learning can be guaranteed if instruction is delivered systematically, one small piece at a time, with frequent tests to ensure that students and teachers stay on task. Elaborate instructional programs and systems are produced, glossily packaged and extravagantly advertised, claiming impossible levels of effectiveness and playing continuously on parental guilt. Detailed, objectiveis specified for the particular model of instruction that teacher should be engaged in at any particular time, and equally detailed tests are imposed to ensure conformity to the chosen path, no manner how much confusion, frustration, and despair result" (p.2).

This excerptprovides a thought provoking avenue for

the educational institutions to counter question their curriculum designing process and teaching and learning practices in their institutions. Figures 3 and 4 given below are the two situations that presents the reflection of how the structure and anatomy of learning may hinder a student and the kind of challenges a highly motivated studenthas to undergo. These figures will enable practitioners to reflect upon whether learning can be signified best when given a free zone or in structured models. In the first figure, learning is taking place the traditional way whereby a hierarchy is to be followed stepwise and it may appear rigid and progression focused.

Evaluating
• Critically synthesizing if the work done is applicable in the
• real life context or not
• Learning Genre: Asked to evaluate new strategy

Creating
• Coming up with own redefined genre of the studied
phenomenon
• Learning Genre: Asked to propose new strategy

Analysing
• Critically appraising its utilization in the real context and
reflecting on its conceptual modification
• Learning Genre: Asked to reflect if the project went well

Applying
• Applying the knowledge in the real context.
• Learning Genre: Asked to carry out a project

Understanding
• Establishing understanding of the key concepts
• Learning Genre: Asked to comprehend key concepts

Knowing
• Collecting information pertinent to the subject area. Memorizing
key concepts
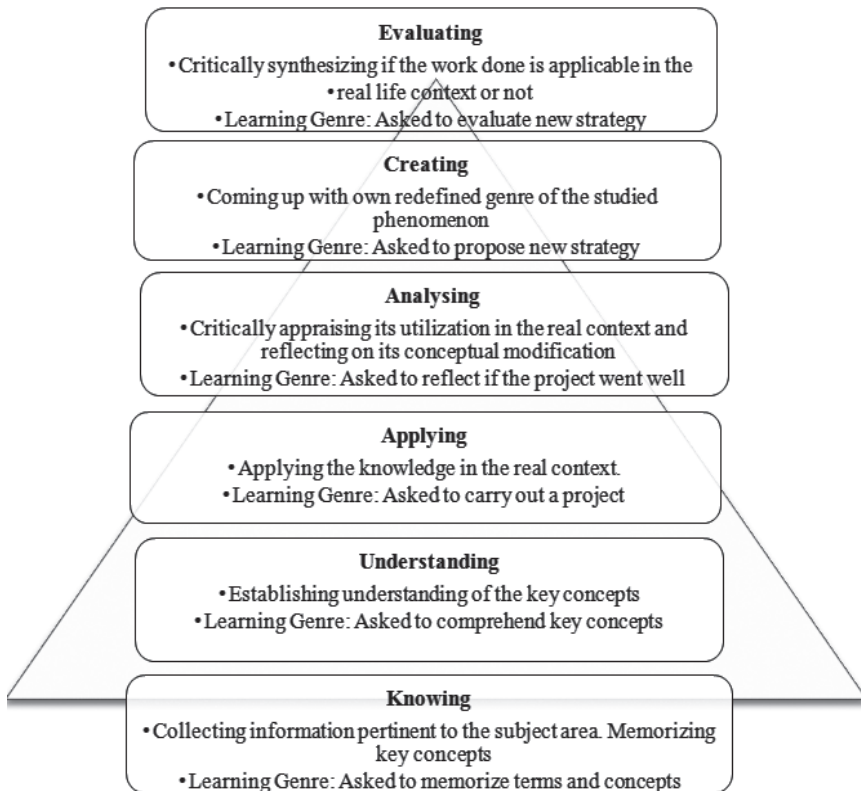• Learning Genre: Asked to memorize terms and concepts

Figure 3. Student Learning Motivation – The Bloom's Way –

Structured Progressive Heirachy(Komárek & Mareš, 2012).

In the proposed revised figure 4 in the context of higher education settings all domains of cognitive progression of learning are cyclical, can happen in a dynamic sequence and learners and teachers have autonomy to shift their approach to it at any point of time during a learning venture. This enables learning to happen in a free dimensional mode incorporating the past learned experiences and reflective analysis of the new knowledge creation activity.
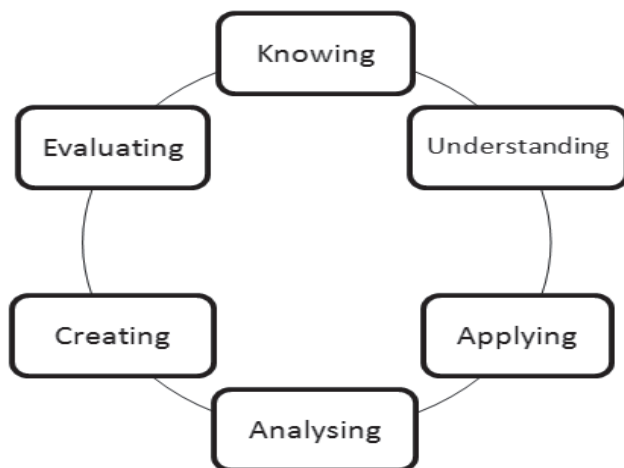

Figure 4. Student Learning Motivation – The Free Facilitated Way –

Concluding Reflection Notes

Considering the criticality of the student learning, motivation and the acknowledging dynamism of human learning approach, it appears vital for the academicians at the university level to question each model and practice to inform their teaching methodology. The questions educators and academicians essentially need to reflect upon while challenging the process of a progressive taxonomy are:

1. Is learning confined and limited to progressive genre or does it happen in a dynamic mode?

2. Does teaching have to be planned or is it learning that should be planned?

3. Does learning require a structured pathway and confined set of standards?

4. Is there a need of a learning objective taxonomy, which is ultimately resulting in severely structure, formal and lengthy assessment practices?

5. Does the human mind require to first memorize the concepts before applying it in the real context? Have these models been applied in the past as well?

6. Does a weaker memory obstruct the functioning of a skill?

7. What is more important: Learners' motivation or a structured plan of action with systematically laid out objectives?

8. What drives adult learners to acquire a new skill: Knowledge and understanding or experiential learning?

9. Is the learning objective taxonomy holistic? Does it cater to the students with specific and special needs?

Such questions are significant while designing curriculum

and drafting learning policies of any educational institution and program. Learner motivation should be the utmost priority, which comes from their experiences and their creative ideas than a process of mere transfer of knowledge in a sequential manner.

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