Bloom's Revized Taxonomy and Critics on It

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Abstract

The aim of this study is to point out the reasons of and the critics about revised taxonomy which has been used since 1956 and was revised in 2001. Scanning method is used in this study. In the light of analysis of data collection, these results are obtained: 1. Reasons behind the revision of Bloom's taxonomy are; being unable to respond with a one-dimensional form to the developments in educational psychology and learning approaches, having difficulty in evaluating owing to the cumulative hierarchical framework of original taxonomy, and being insufficient of one-dimensional form of Bloom's taxonomy within the scope of cognitive processes. 2. Here are the main critics of the revised taxonomy; revised taxonomy brings terminological and structural innovations for the process of instructional planning, increased number of sub-categories contributes to phase of reading objectives, revised taxonomy makes it possible to use new concepts, such as performance and authentic assessment, there are different opinions about the two steps that are accepted as the most difficult and located at the top. The knowledge dimension and cognitive process dimension are understandable enough and there are difficulties regarding the use of the classification.

Key Words: Bloom, taxonomy, revised taxonomy, objectives, curriculum.

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Bloom's taxonomy is a framework that was designed to classify the objectives of any curriculum in terms of explicit and implicit cognitive skills and abilities. Taxonomy is accepted as one of the important studies that affect the curriculum in 21st century. For instance, a search engine shows more than 455,000 results for Bloom's taxonomy (Education, 2012). Bloom's taxonomy survives against the time. It has been deepened, interpreted in different ways and its scope has been broadened in due course thanks to its long history and recognizability. As a result of searches and studies on original taxonomy, many comments and implementations which different in certain ways are presented form drafting work to broadened instructions. Despite the varieties, only one revision is accepted (Forehand, 2005). This revision was designed by an old student of Bloom, Lorin W. Andreson and David R. Krathwohl who is one of the designers of the original taxonomy.

Revision of Bloom's Taxonomy

Reasons of revision of the original taxonomy are mentioned below.

Features of 21st Centuries

Quite a few new theories and approaches have been involved in the literature as a result of researches carried out in educational and psychological terms since the date when Bloom's taxonomy was published. Theory and approaches such as constructivism, metacognitive skills and self-regulated learning affect the educational process, support autonomous learning and cognitive and perceptual necessity of being responsible of the learning process. These theories and approaches clear up the necessity of the taxonomy revision (Amer, 2006). Today's world is different from the Blooms original taxonomy that reflects features of 1956. In this day and time educators have more knowledge about how learning takes place and how teachers lecture (Startalk, 2009). In this case, revision of the taxonomy and appropriate structure to become a learner-centered becomes important.

Cumulative Structure

Original taxonomy has a cumulative framework. It progresses according to the degree of difficulty, and based on the need to perform a previous one for the next step. There is rigid hierarchy of categories. Likewise the original taxonomy, revised taxonomy presents its cognitive process in categories. They are different each other in terms of difficulty. However, because the revised taxonomy is more suitable for teachers to use, the rigid hierarchy between categories was softened up and overlapping between categories was provided (Krathwohl, 2002).

Recent Developments in Education and Constructivism

Constructivism emphasizes how students create knowledge while they are busy with meaningful learning. Constructing process requires both comparing new information with old ones and using necessary various cognitive processes for this information. In this framework, students can participate in an active way in learning process. Students choose the information themselves and form their own meaning on their own. In the past, it was necessary when some students reached up the top level. Today, it is expected that every student should make progress on yearly basis. For this reason, combining program objectives, teaching and assessment is more important than ever merged (Pickard, 2007).

Unidimensionality

Knowledge step consists of both noun and verb forms in the original taxonomy. Whereas target dimension described as noun form is situated in the wide frame bottom steps of knowledge step, verb forms describing cognitional process is defined as students' recognizing and remembering the knowledge. As a consequence of that knowledge step expected to have two dimensional characteristics becomes unidimensional. Unidimensional structure of the original taxonomy fails within the scope of cognitional process. In the knowledge-sized original taxonomy students are asked for both knowing the knowledge and remembering it. It was inherently bidirectional and different from other categories. This abnormality has been changed in the new taxonomy (Krathwohl, 2002).

Revised Bloom Taxonomy

In the Revised Bloom Taxonomy, changes are seen in three main departments. These are (Forehand, 2005; Krathwohl, & Anderson, 2003), 1.Terminology, 2. Structure and 3. Emphasis.

Terminological Changes

Terminological changes, between two regulations, may be the most evident and complicated one. Constitutively, statements belonged to Bloom's six main departments are transformed from noun to verb. In addition to this, "knowledge" step situated at the bottom is renamed and changed as "remembering". Also, "perception and synhesis" steps are renamed as "understanding and creation" (Forehand, 2005).

Structural Changes

Structural changes can be seen as a sharp shift at first glance. However they appear to be fairly logical when closely examined. The original taxonomy was a one-dimensional form. With the addition of the outcomes, the Revised Bloom Taxonomy has turned into a form of two-dimensional table. While one of the dimensions identifies the Knowledge Dimension (the

knowledge to be learned), the other one is the dimension on the cognitive process (the process used to learn) (Forehand, 2005). The most obvious feature of the Revised Taxonomy is that classification has been structurally switched to a two-dimensional form comprised of "the knowledge dimension" and "the cognitive process dimension (Answer, 2012).

The Revised Taxonomy places the "name" and "verb" components of the original Knowledge Level into two separate dimensions (Amer, 2006). These are a- Knowledge Dimension (noun aspect). In this dimension, nouns which describe the knowledge (content) to be learned take place. These are factual knowledge, conceptual knowledge, procedural knowledge and metacognitive knowledge. b- Cognitive Process Dimension (verb aspect). There are knowledge (content) to be learned and verbs describing what students will learn to do with this knowledge in this dimension. Classification of the objectives does not change, yet the names of categories are revised and they are written in the verb form (Answer, 2012).

Changes in Emphasis

Bloom himself recognized the fact that the taxonomy was being unexpectedly used by countless groups. Therefore, a much broader audience is intended with the revised version of the taxonomy. Emphasis is placed upon its use as a "more authentic tool in terms of curriculum planning, instructional delivery and assessment" (Forehand, 2005).

Other Changes

When educators think about how they can assess the students, the intersection of knowledge and cognitive process dimensions can facilitate the selection of teaching activities. In this context, the use of Revised Bloom Taxonomy enables educators to identify which knowledge they expect students to use and to determine which cognitive process dimension is used (Pickard. 2007).

Revised Bloom's taxonomy table is given below:

Figure 1: Bloom's Revised Taxonomy Table

THE DİMENSİON	THE COGNİTİVE PROCESS DİMENSİON					
	1. REMEMBER	2. UNDERSTAND	3. APPLY	4. ANALYZE	5. EVALUATE	6. CREATE
FACTUAL KNOWLEDGE						
CONCEPTUAL KNOWLEDGE						
PROCEDURAL KNOWLEDGE						
METACOGNİTİVE KNOWLEDGE						

(Krathwohl, 2002; cited in Tutkun & Okay, 2011).

Critics for the Revised Taxonomy

Forehand (2005): 1- The revision includes several seemingly minor, yet conceptually fairly significant changes. 2- The Revised Taxonomy provides the educators with a meaningful systematic classification for thinking and learning processes. Six levels in this structurally cumulative and hierarchical system constitute a succession. 3- In the process of teaching and learning, teachers need to evaluate students' skills. In order for this significant evaluation to be carried out, level of intellectual behaviour is required to be classified. The Revised Taxonomy, from this context, provides an assessment tool for thinking skill. 4- Today's teachers have difficulty in deciding upon how to spend the classroom time. From this aspect, it is an essential requirement to range educational goals with local, regional and national standards. The Revised Taxonomy clarifies the coherence of purpose, goal, "essential question" and target with each lesson plan. 5- Containing 19 subcategories and two dimensions, the revised taxonomy constitutes a clearer structure. In other words, it provides teachers with a powerful tool to develop better lesson plans (Forehand, 2005).

Huitt (2009): Bloom's taxonomy was revised in order to adjust it to suit the the more outcome-focused modern education objectives. The level of synthesis is placed at one step higher than the level of evaluation. However, levels of evaluation and synthesis are both significant, and none of them is superior than the other. Both of them are the equal from the aspect of complexity. Once either of them is omitted in the process of problem solving, the efficiency of the process declines. Education (2012): 1- Terminological insight was ignored. In this context, content sufficiency must be questioned. 2- It seems problematic that knowledge is placed into the same process with skills and abilities, especially into the lowest level of the process. 3- The fact that both local and central government focus on the standards of the program reminds educators how valuable the objectives are.

Yüksel (2007): The Revised Taxonomy hasn't brought a radical change onto Bloom's original classification, yet has provided some significant innovations. The subcategories of all levels in the original table have been made wider and more comprehensible. Bümen (2006): 1- The Revised taxonomy enables it to utilize qualitative data collection tools or recent approaches such as performance-based and authentic evaluation. 2- Making up the deficiencies of the Original Taxonomy, the Revised Version aims to reflect the accumulation of recent knowledge and implementations in the field of educational science. Ayvacı & Türkdoğan (2010): With this new arrangement, classification of cognitive domain is more functional and traceable.

Conclusion and Discussion

This study intends to point out the reasons for taxonomy revision and the critics on the revised taxonomy. The original taxonomy has been widely acclaimed and commonly used in our country as in the whole world, and it will obviously be in use for a long time. However, as for everything related to human being, a revision for the taxonomy has become inevitable with the proceeds of the new millennium. In this regard, Anderson and Krathworlh must be acclaimed and thanked for their studies. On the other hand, it must be taken into account that the revised taxonomy is required to be comprehensible at higher levels and to be interiorized by the educators, and also, related samples of various disciplines are required to be built up in the literature in order to enable school teachers to utilize the revised version. From this aspect, curriculums must be revised accordingly and the implementers -the teachers- must be trained.

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