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Peanuts to Teachers Understanding of the Practicability of Taxonomy of Educational Objectives, Associated Instrument and its Classroom Application

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ABSTRACT

The research study x-rayed peanuts (areas that looks too common but very important) to the teachers understanding of the practicability of the taxonomy of educational objectives, associated instrument and its classroom application with an emphasis on Benjamin Blooms (1956), Lorin Anderson, David Krathwohl, and Simpson (1972) taxonomy of educational objectives. This study became paramount because most teachers do not see the need to fully utilize the taxonomy of education in their assessment of students. This underscores the need for quality education to any society that wants to compete intellectually in this global village cannot be compromised with. This means that for quality to be maintained there must be a well-stated taxonomy of the intended objectives also referred to as educational domains (cognitive, affective, and psychomotor). To this end, the teachers understanding of the practicability of the taxonomy of educational objectives, associated instruments and its classroom application in school in Cross River State Nigeria with the emphasis of Bloom's taxonomy has not been fully understood by most teachers in primary, secondary and tertiary institutions. This is because most teachers are ill-trained on how to apply these educational domains in measuring, assessing, and evaluating students learning outcomes. It is also alarming to say that most teachers do not know when and how to apply the taxonomy of educational objectives in the course of classroom assessment and evaluation of students. The present paper has pinpointed peanut (salient) areas teachers should understand in the domains of learning and how to apply them with their relevant dimensions as applicable in education.

Keywords: Teachers Understanding, Practicability, Taxonomy, Educational Objectives, Instrument.

I INTRODUCTION

The need for achieving quality practices in assessing students learning outcome desires a well-established educational objectives. When the educational objective o any lesson is not adequately planned, there is bound to be issues with the overall results expected from such faulty objectives used. Taxonomy entails those statement of objectives that the students are expected to gain during and after instruction. The idea of taxonomy of educational objective seeks to ascertain a frameworks of the teachers statement of the intended outcome of what the students should learner after a presenting the instruction. The idea of taxonomy of education was proposed by a well erudite psychologist known as Bloom's Taxonomy (1956) initiated the idea of educational taxonomy which focused on promote higher forms of thinking in education, such as analyzing, processing of ideas, evaluating concepts, procedures, and principles, rather than just remembering facts (rote learning). It is most often used when designing educational, training, and learning processes. Bloom's identified three domains of educational activities namely; cognitive (Knowledge); which has to do with the mental skills, Affective (Attitude); which deals with feelings or emotions and the Psychomotor or physical skills (Skills). The cognitive domain deals with the application of the individual intellectual and mental capability. According to Benjamine Bloom this domain deals with six (6) basic levels which emanates from mere fact recognition (lowest level) to mental level which deals with more abstract metal and complex levels classified as evaluation (highest level). This level deals with verbs such as summarise, explain, write, test etc.). It should be noted that the blooms taxonomy has the old

and revised edition as presented by Lorin Anderson, a former student of Bloom, and David Krathwohl who revisited the cognitive domain in the mid-nineties and made some changes as presented below.

Table 1: Bloom's original and revised taxonomy of educational objective

Original domain	Revised/new domain
Evaluation	Creating
Synthesis	Evaluation
Analysis	Analyzing
Application	Applying
Comprehension	Understanding
Knowledge	Remembering

II LEVELS OF COGNITIVE DOMAIN OF EDUCATIONAL OBJECTIVES

The cognitive domain deals with the practical application of knowledge through cognition and the development of intellectual skills (Bloom, 1956). It entails recognition or the ability to recall specific ideas procedural patterns, and concepts that serve in the development of intellectual abilities and skill (Nunnally, 1970). There are six major categories of cognitive processes, starting from the simplest to the most complex: Knowledge, comprehension, application, analysis, synthesis and evaluation represented with the acronym (KCAASE)

1. **Knowledge:** This is defined as the remembering of previously learned material. This may involve the recall of a wide range material, from specific facts to complete theories, but all that is required is for the student to bring to mind the appropriate information. Knowledge represents the lowest level of learning outcomes in the cognitive domain. Examples of terms used in knowledge level are; defines, describes, identifies, knows, labels, lists, matches, names, outlines, recalls, recognizes, reproduces, selects, states .

2. **Comprehension:** This has to do with the ability to grasp the meaning of material and translating the material from one form to another (words to numbers), by interpreting material (explaining or summarizing), and by estimating future trends (predicting consequences or effects). These learning outcomes go one step beyond the simple remembering of material, and represent the lowest level of understanding. Key terms used are; comprehends, converts, defends, distinguishes, estimates, explains, extends, generalizes, gives an example, infers, interprets, paraphrases, predicts, rewrites, summarizes, translates etc.
3. Application: Application refers to the individual initiative (ability to adopt material learned in real life (concrete situation). It includes the application of methods, techniques, laws, principles theories and concepts in solving practical issues in life. In this area, the learning outcome requires a higher level of the individual understanding than those under comprehension**.** The most commonly used keywords associated with this level are; compute, discover, manipulate construct applies, changes, demonstrates, modifies, operates, predicts, produces, relates, prepare, shows, solves, uses etc.

4. **Analysis**: in this level, the learner is expected to break a whole into smaller components parts so that it can easily be understood. This means that when parts are being broken down it will help improve learning in bite and the organizational structures of the learnt items will be easily understood. In most cases, it deals with the identification of the characteristics of parts, there after analysisng the relationships between the parts, and recognition of the organizational principles involved. A higher intellectual thinking of learning outcome is expected here than in the comprehension and application level because they require an understanding of both the content and the structural form of the material. The basic keywords that are mostly adopted here are; outlines, compares, analyzes, breaks down, contrasts, deconstructs, differentiates, discriminates, distinguishes, illustrates, infers, relates, selects, separates, diagrams and identifies etc.
5. **Synthesis:** in synthesis, the individual gather different parts of an object of a leart material to arrive at complete whole. This may involve the production of a unique communication (theme or speech), a plan of operations (research proposal), or a set of abstract relations (scheme for classifying information). Learning outcomes in this area stress creative behaviors, with major emphasis on the formulation of new patterns of structures. The likely keywords that are usually adopted are compiles generates, categorizes, combines, creates, devises, explains, modifies, organizes, plans, rearranges, reconstructs, relates, reorganizes, rewrites, summarizes, revises, designs, composes and tells, writes etc.
6. **Evaluation:** evaluation deals with passing valid judgment as per the worth or value of a programme. It connotes the teachers ability to determine the and judge the value of learnt material (statement, novel, poem, research report) for a given purpose. In passing judgment, there must be definite criteria called bench mark or cutoff point or standard set aside to use. The set standard may be internal criteria (organization) or external criteria (relevance to the purpose), and the student may determine

the criteria to be given to them. This level is regarded as the highest level of the cognitive domain simply because contains all the characteristics (elements) of all of the other categories in addition to conscious value judgments based on clearly defined criteria (Thorndike & Hagan, 1977). The commonest terms (keywords) that are always used in this level of cognitive domain are appraises, explains, interprets, compares, contrasts, criticizes, discriminates, evaluates, justifies, relates, summarizes, concludes supports, critiques, defends and describes etc.

3. THE AFFECTIVE OR FEELING DOMAIN

Like cognitive domain (objectives), affective domain can also be divided into a hierarchy (Krathwohl, 1964). This area is concerned with feelings or emotions arranged from simpler feelings to those that are more complex. The components of affective domain are receiving, responding, valuing, organization and characterization of value or value complex which can be represented with the acronym (R^2 VOC), these are explained below.

1. **Receiving**: This refers to the learner's sensitivity to the existence of stimuli awareness, willingness to receive, or selected attention. Receiving is being aware of or sensitive to the existence of certain ideas, material, phenomena and being willing to tolerate them. Examples of terminologies used in this domain are; differentiate, to accept, to listen, to respond to etc.

2. **Responding**: This refers to the learners' active attention to stimuli and his/her motivation to learn, willingness to respond, or feelings of satisfaction. Responding is committed in some small measure to the ideas, materials, or phenomena involved by actively responding to them. Examples of terminologies used to describe this domain are; to comply with, to follow, to commend, to volunteer, to spend leisure time in, to acclaim etc.

3. **Valuing:** This refers to the learner's beliefs and attitudes, acceptance, preference, or commitment. Valuing is willing to be perceived by others as valuing certain ideas, materials, or phenomena. Example s of key terms used to describe this domain are; to relinquish, to subsidize, to support, to debate etc.

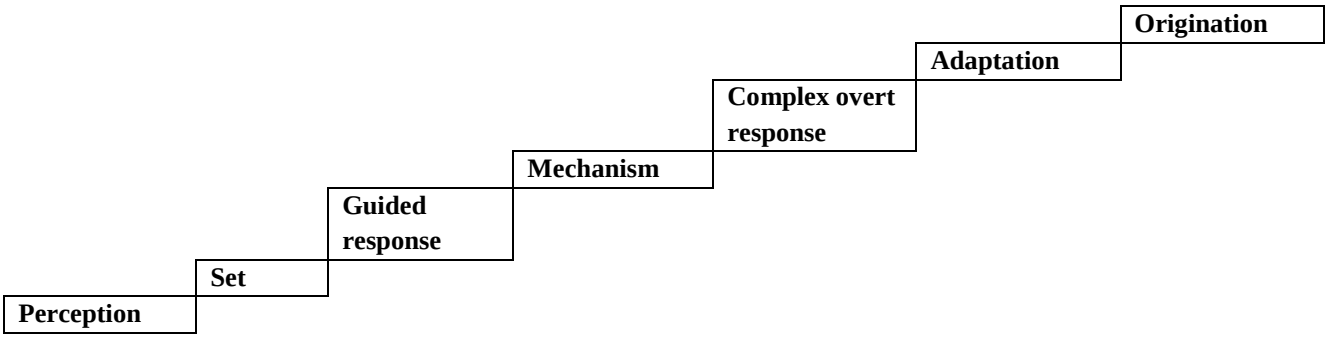
4. **Organization**: This refers to the learner's internalization of values and beliefs involving (i) the conceptualization of values; and (ii) the organization of a value system. As values or beliefs become internalized, the leaner organizes them according to priority.

5. **Characterization of value or value complex**: This refers to the learner's highest of internalization and relates to behavior that reflects (i) a generalized set of values; and (ii) a characterization or a philosophy about life. At this level the learner is capable of practicing and acting on their values or beliefs.

4. THE PSYCHOMOTOR OR KINESTHETIC DOMAIN

Psychomotor or Kinesthetic Domain deals with those specific to discrete physical functions, reflex actions and interpretive movements. Traditionally, these types of objectives are concerned with the physically encoding of information. It is interesting to note that while the cognitive taxonomy was described in 1956, and the affective in 1964, the psychomotor domain were not fully described until the 1970s. According to Simpson (1972) the psychomotor domain is characterised by progressive levels of behaviors from observation to mastery of motor-skills (physical skill and coordination). The psychomotor domain is measured in terms of practice and it ranges from manual tasks, such as washing, mopping of floor, to more tedious and complex tasks, such as operating a complex piece of machinery. It is composed of seven major categories presented with the acronym (GOSCAMP) Guidance response, Origination, Set, Complex or Overt response, Adaptation, Mechanism and Perception as it ranges from simplest to the most complex behaviours as shown in Table 4.

Table 2: Simpson (1972) levels of psychomotor domain



A renowned psychologist known as Simpson (1972) built his taxonomy on the work of Bloom and others. This is explained below.

(i) **Perception:** This has to do with the ability to utilize sensory organs Sensory signals (cues) to guide and direct motor activity. Perception ranges from sensory stimulation, through cue selection, to translation. Terminologies used are, isolates, detects, chooses, describes, identifies, relates, selects differentiates, distinguishes etc.

(ii) **Set:** These are those mental emotional and physical characteristics that make one respond in a certain way to different situation (mindset). Keywords used are; describe set are states, reacts, volunteers, moves, proceeds, shows, begins, displays, explains.

(iii) **Guided Response:** It entails trial and error which is associated with practice that can promote improved performance. The common terminologies associated with this method are responds copies, traces, follows, reproduce, react etc.

(iv) **Mechanism:** It deals with the intermediate stage in learning a physical and complex skill. The learner has become used to the learning exercise and the movements can be performed with some self-confidence and ability. Keywords used are constructs, dismantles, displays, fastens, fixes, manipulates, measures, mends, assembles, mixes, organizes, calibrates etc.

(v) **Complex Overt Response:** it connotes the skillful performance of motor acts that involve complex movement patterns. Proficiency is indicated by a quick, accurate, and highly coordinated performance, requiring a minimum of energy. This category includes performing without hesitation, and automatic performance. Keywords used are calibrates, constructs, assembles, builds, dismantles, displays, fastens, fixes, grinds, heats, manipulates, measures, mends, mixes, organizes, sketches. Complex movements are possible with a minimum of wasted effort and a high level of assurance they will be successful etc.

(vi) **Adaptation:** In this level, skills are well developed and the individual can modify movement patterns to fit special requirements. Keywords used are adapts, rearranges, reorganizes, alters, changes, revises and varies.

(vii) **Origination:** This has to do with creating new movement patterns to fit a particular situation or specific problem. Learning outcomes emphasize creativity based upon highly developed skills. Terminologies used are arranges, composes, constructs, builds, combines, designs, creates etc. Worthy of note is that the taxonomy explained below is propounded by Simpson (1972). There are two other popular versions of the psychomotor domain as proposed by Dave (1970) and Harrow (1972) which are explained below: Dave (1975) listed five categories of psychomotor domain as presented with the acronym (IMPAN), representing: Imitation, Manipulation, Precision, Articulation and Naturalisation.

(i) **Imitation**: Modeling somebody's behaviour after being manifested. The terminologies like copy, follow, mimic, repeat, replicate, reproduce, trace etc.

(ii) **Manipulation**: Being able to perform certain actions by memory or following instructions. Keywords used are; execute, perform, act build etc.

(iii) **Precision**: Performing a skill within a high degree of precision. Calibrate, demonstrate, master, perfectionism etc.

(iv) **Articulation**: Coordinating and adapting a series of actions to achieve harmony and internal consistency. Keywords used are combine, customize, adapt, creates, constructs, modifies, formulate etc.

(v) **Naturalisation**: Developing mastery of high level performance until it becomes natural, without needing to think much about it. Keywords used are invent, manage, naturally, design, create, develop etc.

According to Harrow (1972) who clearly categorized the psychomotor domain into seven steps which are presented with the acronym (RFFPPPSN) meaning: Reflex Movements**,** Fundamental Movements**:** Fundamental

Movements**,** Perceptual Abilities**,** Physical Abilities, Skilled movements and Non-discursive communication**,** these are explained below:

(i) **Reflex Movements**: Reactions that are not learned, such as involuntary reaction.

(ii) **Fundamental Movements**: These are the basic movements such as walking, or grasping. grasp an object, throw a ball, walk etc.

(iii) **Fundamental Movements**: Basic movements such as walking, or grasping an object, throw a ball, walk etc.

(iv) **Perceptual Abilities**: Response to stimuli such as visual, auditory, kinesthetic, or tactile discrimination. They can be presented in the form of tracking a moving object, recognize a pattern etc.

(v) **Physical Abilities (fitness)**: Stamina that must be developed for further development such as strength and agility, endurance etc.

(vi) **Skilled movements**: Advanced learned movements as one would find in sports or acting. adapt, constructs, creates, modifies etc.

(vii) **Non-discursive communication**: Use effective body language, such as gestures and facial expressions. Terms used are arrange, compose, interpretation etc.

5 CONCLUSION

The need for a better understanding of taxonomy of educational objectives most especially the Benjamine Blooms Taxonomy has been wrongly used by most teacher at the primary, secondary and tertiary institutions of higher learning. This is because every educational undertaking must have instructional objectives. For these objectives to be attained, teacher should be fully equipped with the skills and application of these objectives in the classroom. It is worrisome to say that most of the teacher made test used for assessing and evaluating students are limited to cognitive objective. Without taking due considerations of the levels to adopt when constructing instrument (test) that deals with the cognitive domain. So annoying to say that most teachers do not know how to utilse the affective and psychomotor domain in their quest for students' assessment and evaluation practices in the classroom. Over emphasis on the cognitive domain has led my scholars to say that students cognitive ability has now been subjected to being tested to death, this has really affected the evaluation system used by most teachers. It is on the basis of the that the study conclude that there is a great need for a study to be conducted on peanuts to teachers understanding of the practicability of taxonomy of educational objectives, associated instrument and its classroom application in school in Cross River State Nigeria.

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