Abstract:

Bloom's taxonomy is a classification system of educational objectives, it contains six levels of knowledge, comprehension, application, analysis, synthesis, and evaluation, and it is a useful tool in developing teaching objectives and learning outcomes, it can be applied in assessment and examination's questions of engineering education as well, the levels have many keyword verbs, they assist teachers to get ideas to design and form their questions, also, they assist students to answer them perfectly, because each level gives specific ability to teachers and students.

There are interrelations between quality level, examination's questions, and Bloom's taxonomy levels, also, there are deeper relation between question's quality and learning outcomes, it was proved that 85-100% of level intermediate cognitive questions can result 67-100% of learning outcomes in most engineering education fields, because the questions need to be simplified, meaningful, and accurate. The aims of the research are to improve quality of examination's questions; the Bloom's Taxonomy can achieve this through application of keyword verbs of six levels of it but by the method of application of three procedures of collecting, selecting, and sorting of keyword verbs. Many previous studies presented keyword verbs between 32-265, but this research selected 254 keyword verbs from all six levels, it was affirmed that both levels of application and synthesis take higher numbers of keywords of 62 and 45, both analysis and evaluation take medium numbers of 40 for both, and the levels of knowledge and comprehension take lower numbers of 36 and 31 respectively.

As a new topic, the levels of Bloom's taxonomy were used to improve quality of examination's questions and their answers.

As a new tactic, the collection, selection, and sorting of keyword verbs of levels of Bloom's Taxonomy is regarded as new developed roadmap.

Keywords: Quality improvement, examination's questions, Bloom's taxonomy, engineering education.

1. Introduction And Literature Review:

The examination is student's knowledge level assessment; it is one of the common methods in order to assess the knowledge's level of the students [1]. Bloom's taxonomy can be used actually by staff of teachers to get basic ideas of questions which are asked students in order to recall related facts of different materials in engineering education, it can be used as guidelines of learning as well, because the Bloom's taxonomy levels refer to a hierarchy of question stems that teachers use it to guide their students through the learning process [2]. Many experiments affirmed of deeper dimensions to quality in higher education such as quality of the curriculum and other aspects, in which the Bloom's taxonomy aims to raise them under its six levels classification [3]. W. Edwards Deming defined good quality as a predictable degree of uniformity and dependability, and the quality is an outcome characteristic of na product or service provided to a customer [4], in higher education, the customers are students at the universities and institutes, those are receiving theoretical and practical learning from educational process in engineering fields, they are involved to answer examination's questions of related materials within specific and planned syllabus. Here, the quality expands to other meanings such as education's quality which includes: skilful assessment to facilitate learning and reduce disparities and outcomes that encompass knowledge [5], for higher degree of quality, the contents and forms of examination's questions should be clear, meaningful, and understandable, and they should not contain difficult vocabulary and complex syntax [6]. Also, the Bloom's taxonomy presents the keyword verbs to be used in questions, each keyword verb can define an objective of any question, it clears method of presenting questions, the keywords are working as verbs of how to install questions in such a way that students will be capable to understand and answer them.

As literatures review, some previous studies were studied and researched on Bloom's taxonomy subjects as follows:
1. A study [7] was presented three model levels of Bloom's Taxonomy, they were aimed to ensure quality in systems engineering as a model, they were presented to improve quality of the system and competency through method of analysis in systems engineering.
2. A study [8] introduced Bloom's Taxonomy of education objectives with classifying learning objectives according to skill level required in assessment and evaluation in order to meet
objectives, also, it was confirmed aspects of the teaching, research, and ABE (Accreditation Board for Engineering and Technology) for engineering program accreditation, in which the quality of every engineering department in the country is periodically assessed and evaluated.

3. A study [9] was aimed to make understand among three components of (teaching-learning-evaluation) process in engineering education, it reported mappings of activity verbs to all different six levels of Bloom's taxonomy in order to successful thinking skills by students, it mentioned 119 as total numbers of six levels.

4. A research [10] was made a review of 6 of the other previous researches on the application of the original Bloom's taxonomy between 1994-2001, the overall results were several facts and declared that the Bloom's Taxonomy has been widely applied in testing and evaluation of different subjects such as classroom questions of engineering education.

5. A research [6] built a relationship between examination's questions and each level of Bloom's Taxonomy, it declared that Bloom's taxonomy is a classification system of educational objectives based on the understanding of students, and it explained of how and for what aims the questions are formed by levels as follows:
   - Knowledge level: requires from student to remember facts that they have already learned and recall them as they have been learned.
   - Comprehension level: requires from student to be able and rephrase information using their own statements and translate knowledge into new context and interpret graphs, tables, and charts.
   - Application level: requires from students to identify the relevant information and rules to arrive to the solution and solve problems.
   - Analysis level: requires from students to have ability to separate an idea into its parts or elements, and demonstrate the relationship of the parts to the whole.
   - Synthesis level: requires from students to devise ways to design experiments and test hypotheses, and write a report in which problems are solved.
   - Evaluation level: requires from students to make judgments about the value or merits of an idea, purpose, and solution to a problem, procedure, method or product.

2. Data Collection And Methodology

2.1. What Is Bloom's Taxonomy?
The Bloom's Taxonomy was originated by Benjamin Bloom, he published his idea on the cognitive skills taxonomy in his book, it is a classification system of educational objectives based on level of the student understanding necessary for achievement or mastery, and it contains six levels [6], as shown in figure 1.

![Figure 1: Six levels of Bloom's Taxonomy](image_url)

Also, it is defined as cognitive process and classified into six major arranged levels such as: knowledge, comprehension, application, analysis, synthesis, and evaluation [9].

For higher quality, these levels can be analyzed, a study analyzed these major levels into other sub-levels, categories, criteria, and elements of engineering processes in order to result higher quality application, and to give more accurate results in examination questions [11], but each level means a specific ability in order to achieve a result, the knowledge is the ability to recall, comprehension is the ability to understand, application is the ability to use knowledge, analysis is the ability to separate, synthesis is the ability to put parts together, and evaluation is the ability to judge value of ideas [12,13].

2.2. Why Use Bloom's Taxonomy?
This research selected Bloom's Taxonomy to improve quality of examination's questions because many studies were affirmed a lot of motives and advantages. The Bloom's Taxonomy is used to guide development of: (1) assessments (tests and other evaluations of student learning), (2) curriculum (units, lessons, projects, and other learning activities), and (3) instructional methods such as questioning strategies [13], other study affirmed that it leads to achieve two main objectives of curricular planning and tests [14], it assumed as a useful tool of development of teaching objectives and learning outcomes and it can be deployed in educational examination's questions, because it represents a tool for planning, implementing and assessing instructions [15]. Other motive is connected with answers by students as belonging to one level and keyword verb, the type of answers can help teachers to revise techniques of teaching and how of keyword verbs to be used? Because a study affirmed that keyword verbs are used to improve understanding and examining techniques [12], and Bloom's Taxonomy ensure that the knowledge level of students in engineering with their skills is acquired by the learning assessment [12], also, it preferred to be used because its' levels can give more detailed abilities to
students and the quality of their responses will increased [16,11], the responses of students according to Bloom's Taxonomy's levels are indicated in table 1.

Table 1: Bloom’s Taxonomy and responses by students

<table>
<thead>
<tr>
<th>No.</th>
<th>Levels and responses by students during answering questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Knowledge defines student's talent: in remembering previously learned material</td>
</tr>
<tr>
<td>2</td>
<td>Comprehension defines student's skill: to grasp the meaning of material</td>
</tr>
<tr>
<td>3</td>
<td>Application defines student's capability: to use learned material in new and concrete situations</td>
</tr>
<tr>
<td>4</td>
<td>Analysis defines student's aptitude: to deconstruct material into component parts to accurately understand its organizational structure</td>
</tr>
<tr>
<td>5</td>
<td>Synthesis defines student's knack: to develop new and unique structures, systems, models, approaches, and ideas, based from previous knowledge gains</td>
</tr>
<tr>
<td>6</td>
<td>Evaluation defines student's capacity: to assess effectiveness of whole concepts, in relation to values, outputs, efficacy, and viability</td>
</tr>
</tbody>
</table>

2.3. Quality Level of Examination's Questions:

Firstly, the quality has many definitions, they related to what are required, the quality guru "Crosby" stated that the quality is conformance to requirements, and another frequently used definition comes from "Juran" as the quality is fitness for use [17]. The American Society for Quality- ASQ adopted definition as the quality denotes an excellence in goods and services [18], but the academic quality was illustrated by the Quality Assurance Agency for Higher Education- QAA, it referred to how the how well the higher education provider supports students to enable them to achieve and cover learning, teaching and assessment [19]. There are triangle interrelations among: (1) quality level, (2) examination questions, and (3) Bloom's taxonomy levels, because a study affirmed that in order to improve the quality of teaching, the teachers must be able to set good and proper questions to test the students in the examinations [1].

According to Accreditation Board for Engineering and Technology- ABET, the levels of Bloom's taxonomy will give ability to rise quality of teaching outcomes and their assessment of an engineering graduate [20], also, according to a study [21], the Bloom's taxonomy defines a group of ability in engineering education which balances higher quality such as: (1) an ability to apply knowledge of mathematics, science, and engineering, (2) ability to design and conduct experiments, as well as to analyze and interpret data, (3) ability to design a system, component, or process to meet desired needs, (4) ability to identify, formulate, and solve engineering problems, to understand the impact of engineering solutions, (5) ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

The learning outcomes will enhance examination’s questions, as a study noted relationship between question's quality and learning outcomes, it was resulted that 85-100% of level intermediate cognitive questions, was resulted 67-100% of learning outcomes in most engineering education fields [6]. The quality level connected with exercises and tests in laboratory of engineering fields which connected with elements of Bloom's Taxonomy as well, several authors were suggested to make modification to the laboratory program to be higher quality standards as more calculate - assemble exercises, and more oriented introductory tests [22].

2.4. Problems Presentation:
The examination's questions of engineering education are specific processes because they related to specific solutions of engineering materials, and the solutions should be precise and give accurate results, therefore, they hold many difficulties in their application, hence, both of teachers and students will face complexities to install questions and to answer them, because strong or weak cognitive outcomes will reflect by method of the educational function, so it needed new procedures of application, and the examination's questions always need simplified form and should have understandable expression, because without this, they can not conform requirements and not be fitness for use as quality standards, this enlarges problems in examination process. The Bloom's Taxonomy can achieve these tasks, but it is not so easy to use levels of Bloom's Taxonomy in examination's questions of engineering education because they intersect with each other, and most of keyword verbs need to be collected, selected, and sorted in order to suitable for examination's questions in engineering education. It was noted that there were lacks of application procedures, because there was no sufficient illustration to install examination's questions in most engineering and technical education, and because there was mixture between levels and their keyword verbs, this state generates problems for students' understanding of meaning of questions during examinations and their answering, the same problems face teachers during installing questions.

2.5. Objectives of the Research:
The objectives of this research are to:
• Present knowledge on levels of Bloom’s Taxonomy and their keyword verbs, and how they can serve in gaining clear and understandable examination's questions, then assist their answers.
• Define triangle interrelation of levels, quality, and examination's questions.
• Presenting an explanation of abilities and talents that the levels of Bloom's taxonomy can give to teachers to install and form questions and students to answer them.
• Improvement quality of examination's questions of engineering education and improve skills of teachers and students by using of keyword verbs after their arrangement.
• Do collection, selection, and sorting numbers of keyword verbs in order to be suitable and at higher quality to install questions by teachers and to actual answering by students, and solve mixing between verbs, eliminate difficulties faced teachers and students.
• Present application procedures on suing keyword verbs and present examples of each level.

2.6. Methodology:
In order to gain objectives of the research, a methodology with several steps are used such as following:
• Review of five previous studies and researches, and review their presented keyword verbs, then the methodology collected, selected, and sorted many of them as a suitable for examination's questions in engineering education and to become basis for their forms and raise their quality.
• Explain of quality meanings and its interrelation with ability provided by levels and examination's questions in engineering education.
• Application consists of three procedures such as: three sectors (level, keyword verbs, and examination's questions), keyword verbs sorting and examples, and number of keyword verbs.
• Presenting and selecting of 254 keyword verbs as total numbers of related six levels of Bloom's Taxonomy and showing several examples to give more illustration to both teachers and students, and to eliminate lacks during keyword level's using to form and install questions and answering them.

3. Data Analyzing:
3.1. Literature Review:
The review of previous literatures gave to us an idea that they were worked hard on Bloom's Taxonomy and resulted significant and useful outcomes, but from analyzing them, following notes or lacks were indicated:
1. A study [7] tried to improve quality in systems engineering as a model and through method of analysis, but it not worked on keyword verbs which are basics of Bloom’s Taxonomy.
2. A study [8] was used Bloom's Taxonomy with classifying learning objectives in order to met objectives, it was confirmed three of teaching, research, and ABET, also, it was formulated both (outcome indicators) and (course learning objectives), but it was connected objectives with some keyword verbs but without sorting, and it was mixed between levels and their keywords.
3. A study [9] strengthen understanding among three of (teaching-learning, and evaluation) in engineering education, despite that it was made mappings of verbs to all six levels of Bloom's Taxonomy, but it was not sorted keyword verbs for examination's questions, only it presented total numbers of 119 verbs.
4. A study [10] made review on 6 of previous researches on application of original Bloom's Taxonomy between 1994-2001, it was declared that it widely applied in testing and evaluation, it declared Bloom’s Taxonomy in engineering education as a good way, but it was not arranged keyword verbs and not referred to how they can be used in details.
5. A research [6] was tried to build a relationship between examination's questions and Bloom’s Taxonomy, it used Bloom's Taxonomy as a classification system of educational objectives based on the level of student understanding, but it was not entered into examination's questions as a specific task of engineering education or any other assessment type.

3.2. Levels of Bloom's Taxonomy:
Analyzing each level of Bloom's Taxonomy shows special output character, and demonstrate sort of ability by students that they should have to answer questions, and the content of questions installed by teachers should hold same ability, the levels are analyzed [23] as follows:
1. The knowledge level includes those behaviors which remember the ideas, materials, and phenomena in the questions, because it deals with specific facts, theories, learning procedures, and methods, also, the students are required to enable to recall of information, because they are expected to answer questions or solve problems faster.
2. The comprehension level represents the stage of understanding in questions, because the materials and ideas should be communicated with fullest implications, also, this level enables students to be able to classify and interpret, because it estimated for future trends or next steps.
3. The application level includes the use of abstractions in the form of general ideas, rules of procedures, generalized methods, and technical principles because the subjects must be remembered and applied, also, it enables students to apply concepts and principles gained in the
previous two levels because it utilize what they have learned in new situations.

4. The analysis level represents breakdown of questions into its constituent elements or parts because it makes their relations clear, also, it represents demonstration of awareness of engineering relationship by students because it gives visible explanations for each step of solutions.

5. The synthesis level means putting elements and parts together in order to form a whole things in questions, because it involved each element or part to be arranged and combined to constitute clearly structure, also, it enables students to have ideas ingeniously about design because it will reverses problems on subjects of the engineering.

6. The evaluation level represents the judgments on values of materials and methods for recognized purposes, because the used judgment will be at quantitative and qualitative standards that will be determined by the students, also, this level enables students to develop a series of working drawings, models, and analyzing, because it needed advanced assessments.

### 3.3. Number of Keyword Verbs:

When this research analyzed some of the previous studies and researches, it was noted that each one of them has special numbers and types of verbs and it uses a group of keywords in each level of Bloom's taxonomy, they are serve as cognitive domain and connected with regarded classification. Table 2 indicates the numbers of keywords divided on six levels of each one, with referring to total number of each one of seven previous studies [7, 14, 24, 25, 26, 27, and 28].

<table>
<thead>
<tr>
<th>No.</th>
<th>References: studies, researches, models by authors</th>
<th>Number of keyword verbs to each level from first to sixth</th>
<th>Total number of keyword verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>II</td>
<td>III</td>
<td>IV</td>
</tr>
<tr>
<td>1</td>
<td>E. R. Widmann</td>
<td>18</td>
<td>12</td>
</tr>
<tr>
<td>2</td>
<td>David PASSIG</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>3</td>
<td>IACBE</td>
<td>30</td>
<td>50</td>
</tr>
<tr>
<td>4</td>
<td>IUPUI Center</td>
<td>24</td>
<td>33</td>
</tr>
<tr>
<td>5</td>
<td>Mahbubul Hasan</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>6</td>
<td>Dawn M. Zimmaro</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>7</td>
<td>Caitirona Rooney</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

### 4. Application Procedures:

The procedures of application of keyword verbs in examination's questions of engineering education fields are begin with understanding of how they enter into questions and how the questions are formed which cover one level and one keyword verbs or more, this means that how the teachers form their questions that can give balance between form's type and question's duration with the essence of the subject, in addition, it should be clear and understandable by students, for this application, the procedures contain:

**4.1. Three Sectors:**

Three sectors assumed as vital factors to complete real application of examination's questions, they are: a level, keyword verb, and a question, together they achieve questions according to Bloom's Taxonomy. Figure 2 indicates three sectors.

**Figure 2: Three sectors of all levels, keyword verbs, and examination's questions**

To install questions, three sectors should be applied and existed, this results perfect questions, because the application of what and how the teachers are forming their questions, will lead to what and how the students are answering these questions? This method of application assures successful assessment procedure at high quality degree. Therefore, the selection of level and keyword is important step by teachers or assessors, also, the mode of how the keyword is mixed with content of the question reflects on degree of the understanding by students and their capacity to answer, but in all cases, it needed real keyword with right place and language’s expressions, and based on actual learning outcomes to gain higher quality questions, it was proven that there is a strong relation between question’s quality and learning outcomes, it was resulted that 85-100% of questions level intermediate cognitive questions, was resulted 67-100% of learning outcomes in most engineering education fields, and along with question’s verb examples that represent intellectual activity of the six levels [6], to enhance application, the cognitive domain in engineering education is much essential to be illustrated, it was proved that the cognitive domain take a large range in engineering education [8], in addition, the teachers are required to...
take big attention on feedback and problem solving when they install their questions, it was proven that the effective questions include problem solving and more complex thinking questions that stimulate a student’s mental activities [6]. Table 3 indicates what are demanding from teachers and students according to levels of Bloom’s Taxonomy.

Table 3: Explanation of demands from questions by teachers and answers by students

<table>
<thead>
<tr>
<th>Nr.</th>
<th>Levels 1 to 6</th>
<th>Demands</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Knowledge</td>
<td>The questions are demanding from students to remember facts of the materials. The answer will deal with repeating precisely.</td>
</tr>
<tr>
<td>2</td>
<td>Comprehension</td>
<td>The questions are demanding from students to rephrase information and translate knowledge into new context and interpret. The answer will deal with demonstrating understanding of concepts.</td>
</tr>
<tr>
<td>3</td>
<td>Application</td>
<td>The questions are demanding from students to arrive at a solution and solve problems. The answer will deal with applying learned information to solve a problem.</td>
</tr>
<tr>
<td>4</td>
<td>Analysis</td>
<td>The questions are demanding from students to separate an idea into its parts and demonstrate the relationship of the parts to the whole. The answer will deal with breaking things down into their elements, and formulating theoretical explanations.</td>
</tr>
<tr>
<td>5</td>
<td>Synthesis</td>
<td>The questions are demanding from students to design experiments and test hypotheses. The answer will deal with constituting something and combining elements.</td>
</tr>
<tr>
<td>6</td>
<td>Evaluation</td>
<td>The questions are demanding from students to make judgments about the value or merits of an idea, purpose, and solution to a problem, procedure, method or product. The answer deal with justifying value judgments.</td>
</tr>
</tbody>
</table>

4.2. Keyword Verbs Sorting And Examples:

Sorting of keyword verbs is the second procedure of application, it facilitates of how questions be arranged, then how questions be answered by students, it gives idea on how the questions are formed and balanced with question’s aim, as it assists to define specific learning outcomes, in addition, the precisely clearing of the keyword verbs will facilitate application procedures within education institutions, here, several references [9,14,22,29] were referred to many keyword verbs or verbs through their researches and results on Bloom’s Taxonomy. This research was collected, selected, and sorted many of them as a suitable keyword verbs in order to be used in examination's questions of engineering education, here, the tables 4 to 9 indicates six groups of them in an alphabetical arrangement, some examples were explained as well, in order to give the idea of how to form questions.

Table 4: keyword verbs and examples of the knowledge level

<table>
<thead>
<tr>
<th>Keyword verbs</th>
<th>Some examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>State five functions of the industrial management. Define mechanical corrosions. Classify mechanical corrosions. Describe moment of rotating bar. Find equation of motion law. List major commercial petrochemical materials.</td>
<td>State</td>
</tr>
<tr>
<td>Define moment of rotating bar. Describe equation of motion law. Find z quantity in the triangle directions. List major commercial petrochemical materials. List five properties used to explain behaviors of the sound waves. Select the right angle in technical drawing. What is the electrical voltage? What would the major product obtained from alloy of copper and bronze? Where can you find best concrete mixture? Write a technical report on two phase of fluid flow.</td>
<td></td>
</tr>
</tbody>
</table>

Table 5: keyword verbs and examples of the comprehension level

<table>
<thead>
<tr>
<th>Keyword verbs</th>
<th>Some examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess, Change, Classify, Compare, Conclude, Contrast, Defend, Demonstrate, Discern, Discuss, Exemplify, Expand, Explain, Extend, Illustrate, Include, Infer, Interpret, Outline, Paraphrase, Relate, Rephrase, Report, Restate, Review, Rewrite, Show, Summarize, Supplement, Translate,</td>
<td>Assess whether or not the control system is working. How would you classify the type of chemical released by the posterior pituitary? Compare between AC and DC motors. Demonstrate which behavior of sound waves will activate. Explain the water cycle and how it works. Interpret the electromagnetic spectrum order. Outline mechanism for the dehydration of 1-methyl-1-cyclohexanol. Show that the cantilever is declined. Summarize the reaction between O₂ and C.</td>
</tr>
</tbody>
</table>

Table 6: keyword verbs and examples of the application level
Some examples of how electronic sensors can be used in furnace. Can you develop new iron production? What would you make up of the machine that can produce? How would you build a new steel pole with band saw at the end of the workshop? How would you find the composition of iron and steel? How would you illustrate the measurement of forces among each point on the area? Can you discover how the electrical signal showed? Do graphics for the first one of three models of designed unit. Identify them. Organize and arrange steps of transcription in a correct order. Simplify the complex fraction of (y-1/4+y^2+6y-6y+3). Survey the industrial accidents in last five years.

Table 8: keyword verbs and examples of the synthesis level

<table>
<thead>
<tr>
<th>Keyword verbs</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adapt, Add, Build, Change, Choose, Combine, Compile, Compose, Construct, Delete, Design, Develop, Discuss, Elaborate, Estimate, Formulate, Happen, Imagine, Improve, Integrate, Invent, Make, Make up, Maximize, Minimize, Modify, Offer, Organize, Originate, Perform, Plan, Predict, Prepare, Produce, Propose, Rearrange, Replicates, Restructure, Rewrite, Solve, Suppose, Tell, Test, Theorize.</td>
<td>Add methanol to gasoline to clean about surrogate compensation. Combine the grinding steel with band saw at the end of technical workshop. Delete statement in oracle SQL developer to install other programs. Design the Zinc-coated or galvanized steel to give a unique combination of high strength, formability, light weight, and corrosion resistance. How to formulate a research question in qualitative scientific research? Integrate between quality and safety concepts according to international standards. How you make up brushes for painting of iron produced in the factory? Modify the rate of temperature increase in gas tube in refrigeration. Prepare a project on components of disaster and evacuation management. Rearrange the equation by subtracting what is to the right of the equal sign from both sides of the equation: 4/5*(x-(3)<em>3/4</em>x-[2x]*1/2) = 0.</td>
</tr>
</tbody>
</table>

Table 9: keyword verbs and examples of the evaluation level

<table>
<thead>
<tr>
<th>Keyword verbs</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree, Appraise, Argue, Assess, Attribute, Award, Choose, Claim, Compare, Conclude, Criticize, Confront, Decide, Defend, Dispute, Determine, Disprove, Estimate, Evaluate, Explain, Influence, Interpret, Judge, Justify, Mark, Measure, Opinion, Predict, Prioritize, Perceive, Prove, Rank, Rate, Recommend, Select, Separate, Set a norm, Summarize, Support, Value.</td>
<td>Appraise the weight of packaging sugar industry within last six months. Assess the influence of environmental policies for capital city. Compare between first sampling plan with second sampling plan in quality control. Explain the decrease of efficiency rate of network of water distribution in new opened project. Justify the increase of carbon monoxide in middle of the city during midday. Measure the time heating of water in connected pipes. Prioritize the extra energy costs into included values by...</td>
</tr>
</tbody>
</table>
4.3. Numbers Of Keyword Verbs:

After presenting six groups of keyword verbs for examination's questions in last tables, as a result, each level has numbers of them as they indicate in table 10.

<table>
<thead>
<tr>
<th>Series of the levels</th>
<th>Names of the levels</th>
<th>Numbers of the keywords</th>
<th>Ratio of each level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level I</td>
<td>Knowledge</td>
<td>36</td>
<td>14.17%</td>
</tr>
<tr>
<td>Level II</td>
<td>Comprehension</td>
<td>31</td>
<td>12.20%</td>
</tr>
<tr>
<td>Level III</td>
<td>Application</td>
<td>62</td>
<td>23.39%</td>
</tr>
<tr>
<td>Level IV</td>
<td>Analysis</td>
<td>40</td>
<td>15.74%</td>
</tr>
<tr>
<td>Level V</td>
<td>Synthesis</td>
<td>45</td>
<td>17.71%</td>
</tr>
<tr>
<td>Level VI</td>
<td>Evaluation</td>
<td>40</td>
<td>15.74%</td>
</tr>
<tr>
<td>Total numbers of all keywords = 254</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Results And Discussion:

5.1. Results:

- The application and synthesis have maximum numbers of keywords of 62 and 45 respectively more than other levels, the analysis and evaluation take medium numbers by 40 keywords for each one, and finally, the knowledge and comprehension take minimum numbers of keywords, they have 36 and 31 respectively.
- The questions of intermediate cognitive by 85-100% can give the result about 67-100% of learning outcomes in most engineering education fields.
- Many previous studies were published their results on Bloom's Taxonomy, they were choose numbers of keywords between 32 to 265 keywords, in which they used in examination's questions, the keywords of levels are for knowledge were between 4 to 30, for comprehension between 4 to 50, for application were between 5 to 60, for analysis were between 5-40, for synthesis were between 7 to 50, and for evaluation were between 7 to 35.
- The practical procedure has three factors of level, keyword verb, and question.
- We purify some keyword verbs to be used in examination's questions that can be used in engineering education, the numbers are: 36 for the knowledge, 31 for the comprehension, 62 for application, 40 for analysis, 45 for synthesis, and 40 for the evaluation, they take ratios between 12.20% to 23.39%, hence the total numbers will be 245 keywords.
- From 254 keyword verbs, there were 36 keyword verbs (14%) were repeated in more than level, 1 was repeated four times, 6 were repeated two times, and 29 were repeated two times.

5.2. Discussion:

- The application, synthesis, analysis, and evaluation are represented higher cognitive levels which can their keyword verbs be used in examination's questions in engineering education because they enter into engineering processes with a wider range, especially with application and synthesis, and because they deal with achieving a result or scientific process, and they deal with assessment and required appraisal to the result or scientific process, but the application and synthesis are more connected with practical topics, and analysis with evaluation are more depend on logical analysis in engineering fields.
- The comprehension and knowledge have little attention in compare with other four levels in question of engineering education because it deals more with theoretical range, presenting information, data processing details, and extent of understanding, but in some materials have wider uses range.
- In previous studies was indicated that all of them were published six levels of Bloom's Taxonomy but with different numbers of keywords, they were between 32 as minimum and 265 as maximum numbers, because they came about overall specialization of education worldwide, and they want to contain all relevant to the education.
- The repeated keywords occurred because many meanings and purposes of them are near in each other, but in all cases, the phrases of questions will be different according to type of engineering theme.
- The practical should have three factors in order to build a higher and more cognitive understanding of questions, and for more quality level.
- The questions of intermediate cognitive have higher degree of learning outcomes because it can give higher quality standard with using of keyword levels within related level.

6. Conclusions And Recommendations:

6.1. Conclusions:

There is a lot of confirmation that the Bloom's Taxonomy can improve learning outcomes, and it leads to improve process of education and assessment and leads to gain objectives with effective range. It leads to enrich the contents of examination's questions in order to be clear and obvious in their meanings, the Bloom's Taxonomy used as a tool of
examination’s questions of engineering education, six levels of Bloom’s Taxonomy have many keyword verbs, as they published by many previous studies or researches worldwide, but each one tried to present little different keyword verbs and for overall subjects, but it can be purified to questions of engineering questions as in this research. There different between six levels according to their numbers and type of keyword verbs, and many of them were repeated among them. To apply levels in examination’s questions of engineering education, three procedures of application were presented and analyzed by this research, the aims are to gain high quality standard of the questions.

6.2. Recommendations:
It is recommended to increase the role of levels to install and form questions by teachers, and the keyword verbs ought to be illustrated to all teachers to avoid mistakes in content and form of the questions, and to present seminars to students as well, it prefer to distribute the list of keyword verbs within levels to institutions for more accurate results and leaning cognitive outcomes.

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