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Yulis Setyowati

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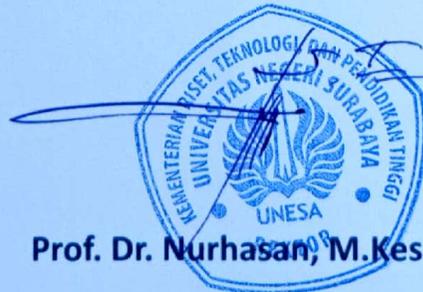
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Prof. Dr. Nurhasan, M.Kes.

Conference Chairman



Didik Nurhadi, Ph.D.

Promoting University Students' Critical Thinking Skills through Implementation of the Revised Bloom's Taxonomy in Language Assessment

A Theoretical Perspective

Yulis Setyowati

Universitas Negeri Surabaya
Universitas Wijaya Putra
Surabaya, Indonesia
yulissetyowati@uwp.ac.id

Susanto

Universitas Negeri Surabaya
Surabaya, Indonesia
susanto@unesa.ac.id

Ahmad Munir

Universitas Negeri Surabaya
Surabaya, Indonesia
ahmadmunir@unesa.ac.id

Abstract—Some studies showed that critical thinking, particularly in Indonesia still is rarely promoted in a classroom even though many experts noted that critical thinking is a crucial concern in the education field. Thus this paper aimed at proposing the use of the revised Bloom taxonomy to explore critical thinking of university students through language assessment. The article provides the empirical evidence theory about the tremendous benefit of the revised Bloom's theory in language assessment in promoting critical thinking skills of university students. To start with, this recent paper presents the previous studies which stated that critical thinking has been investigated in several areas in language teaching but not deal with language assessment based on the revised Bloom's taxonomy. Before the topic of promoting critical thinking can be addressed, it is essential to present the six-level of Anderson and Krathwohl (2001) taxonomy which is then called the revised Bloom's taxonomy. Then this paper explains in what ways the revised Bloom's taxonomy in language assessment works to promote university students' critical thinking skills. To complete the paper, a summary is displayed at the end of the paper to accommodate the overview of the main point of the paper

Keywords—critical thinking; the revised Bloom's taxonomy; language assessment.

I. INTRODUCTION

Critical thinking has been said as one of vital aspect in education fields. In general, mostly education institution including university particularizes the competence to think critically as an important aspect of the skill of their graduates. University graduates will manage something unfamiliar and answer real difficulty in working context

which not exists when they were in college. This is why critical thinking is a crucial skill which serves a trademark of a highly qualified graduate. Critical thinking is the ability to examine and appraise information which covers attitudes, value, and character and the whole being [1]. Furthermore, it is a skill to obtain the quality of human among a person. Some studies have been done deal with critical thinking such as Ekahitanond investigated developing critical thinking through peer feedback, while [2] sought the relationship between critical thinking and listening comprehension. Most research dealing with critical thinking were related to English language skills such as listening in Aghaei's research, reading [3]; [4], writing [5], speaking, reading comprehension and others. Those studies did not investigate how to develop critical thinking through implementation of the revised Bloom's taxonomy in language assessment. Thus this paper affords a short and practical recommendation on why and how language assessment based on the revised Bloom's works well in promoting critical thinking skills of university students.

II. DISCUSSION

A. *The Revised Bloom's Taxonomy*

Bloom's taxonomy was established by Benjamin Bloom (1956) which comprise of six levels: Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation [6]. Some years later Anderson and Krathwohl (1990's) a former student of Bloom's revised into Remember, Understand, Analyze, Evaluate and Create. The Revised Bloom's taxonomy is said more fit to the challenges of education era in the 21st century. Moreover, the revised Taxonomy is the classification of cognitive domain which reflects many respects of "ahead of its time" [7] which

facilities the updating skills in education fields. In short Anderson's taxonomy is a fundamental model of critical thinking skills that is the major concern in this 4.0 education era.

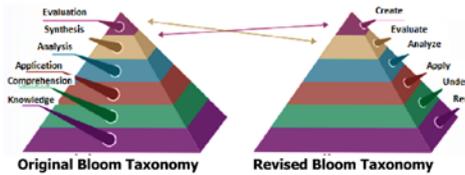


Figure 1: The comparison of the original and revised Bloom Taxonomy

B. The Revised Bloom's Taxonomy & Critical Thinking

There have been many kinds of research conducted in the field of critical thinking and bloom taxonomy. Those examined frequently in numerous textbooks [2] and English language skills: writing, speaking, reading comprehension and others. Hence, in countless research, the studies revealed that critical thinking is evidently related to The Bloom's taxonomy specifically the skills of analyzing, evaluating, and creating [2]; [8]; [9]; [10]. Moreover, it is recognized that Bloom's taxonomy is the pioneer to initiating critical thinking categories skills of analyzing, evaluating and creating. Thus, the use of Bloom taxonomy has demonstrated in enhancing student's critical thinking [11]. Critical thinking skills simply occurred when students activate in analyzing, evaluating and creating [2].

Even many studies have been conducted dealing with the revised Bloom's taxonomy and critical thinking yet there is scarcity research empirically and theoretically on enhancing critical thinking through the implementation of language assessment based on the revised Bloom's taxonomy.

Critical thinking is a skill to analyze and evaluate equipped with the ability to self-directed, self-disciplined, self-monitored, and self-corrective thinking [12]. It involves not only accurate patterns, efficient and communicative interaction but also problem-solving abilities. In this context accurate patterns include models, concepts, definitions, theories, laws, while efficient and communicative interaction covers question at issue, perspective, orientation, and assumptions. The competence also deals with the way students to solve problems even with previously unknown difficulties.

As stated earlier that within revised Bloom's taxonomy lecturers are guided to develop assessment which serves critical thinking of students promote their ability by conducting analyzing, evaluating and creating. It is necessary to present the three cognitive domain. The following serves the details

Table 1: Cognitive Domain in the Revised Bloom Taxonomy

1.0 Remember: Retrieving relevant knowledge from long-term memory.
1.1 Recognizing
1.2 Recalling
2.0 Understand: Determining the meaning of instructional messages. Including oral and graphic communication.
2.1 Interpreting
2.2 Exemplifying
2.3 Classifying
2.4 Summarizing
2.5 Inferring
2.6 Comparing
2.7 Explaining
3.0 Apply: Carrying out or using a procedure in a given situation.
3.1 Executing
3.2 Implementing
4.0 Analyze: Breaking material into constituent parts and detecting how the parts relate to one another and to an overall structure or purpose.
4.1 Differentiating
4.2 Organizing
4.3 Attributing
5.0 Evaluate: Making judgment based on criteria and standards.
5.1 Checking
5.2 Critiquing
6.0 Create: Putting elements together to form a novel, coherent whole or make an original product.
6.1 Generating
6.2 Planning
6.3 Producing

The above table presents the six of Anderson's taxonomy nevertheless in this paper only three skills: analyzing, evaluating, creating are discussed.

C. Assessment within Revised Bloom's Taxonomy

This part will present high order thinking of the revised Bloom's taxonomy – (analyzing, evaluating, and creating) which are described in detail in relation to assessment practices expected for each category.

a. Analyzing

Analyzing includes separating content into its component and determining how the components are linked to each other and to a general framework. This skill covers studying how to determine (differentiate) the appropriate or significant parts of a signal, how to configure (organize) the parts of a signal, and the fundamental meaning of the signal (attribute).

Paul claimed that one of the dimensions of critical thinking is analyzing the quality of sources. In this phase students are expected to be able to demonstrate their critical thinking activities such as case studies, papers, projects or debates. In these activities students are required to discriminate, select relevant part and irrelevant parts, determine how elements functions together, and determine bias, values or concept.

b. Evaluating

Evaluating is described as judging on the basis of requirements and norms. Quality, effectiveness, efficiency, and accuracy are the measures most frequently used. The teacher may determine them or others may give them to the pupil. The norms can be either quantitative (i.e., is that enough) or qualitative (i.e., is that nice or enough). This skill involves cognitive processes of reviewing (referring to decisions on internal consistency) and criticizing (referring to decisions relying on external requirements).

Evaluation of decision making works and making reflective judgment are included in the dimension of critical thinking. Students are demanded to perform or product reviews, diaries, or critiques.

c. Creating

Creating includes placing together components to create a consistent or operational whole; that is, reorganizing components into a fresh model or framework. It involves getting learners create the initial item. It also makes learners making the initial item.

In this creating level, activities which enhancing student's critical thinking are students should be exposed to make, build, design, generate something new such as in research project activities, performances tests, writing essays, or designing products.

D. Promoting students' critical thinking within language assessment based on the revised Bloom's Taxonomy

This section provides a few examples language assessment that promotes scaffolding of students' critical thinking. The examples limits on analyzing, evaluating and creating of the revised Bloom's taxonomy.

Assessment 1

Students are grouped into small one (2-4 individuals per unit). Make sure they know the identities of each other. Ask them to produce a poster that shows the reasons for and against the problem. Provide them with big chunks of the document and colored brushes. They can use a mind map, pillars or any innovative way to do this. They can break off citations and attach them to the document or paraphrase them. They should recognize where each quotation or paraphrased concept arises from by mentioning it (according to the reference technique chosen). On the bottom of the poster should include the quotes published in your university's necessary style. They should also place lights next to statements they believe to be particularly well-founded or significant. This activity may be ended up with a diagram with the bricks in dark gray representing the proof to promote the reasoning and the counter-arguments to those in light gray. All proof should be adequately mentioned.

This assessment aims at helping the students to analyze and to associate numerous different ideas into work. They need to discuss the arguments with each other by asking them to identify the best arguments. They also learn to put reference properly.

Assessment 2

Give students with many authentic sources about up to date topic of their world. These sources can be taken from an online credible website or journals. Then, assign students to evaluate the sources within the following questions:

- Why should you believe the sources?
- Who is the purpose of this source?

- What is the key idea that the writer proposing in the source? Explain the detail of proof that the writer presented
- Write your reference resource supporting your argument

(the questions are adapted from Thomas, 2011)

Assessment 3

In this assessment, students are required to read or study on a certain topic. Then, they are asked to do a multiple-choice test personally. Once they are finished with the test they should discuss why they choose their answers. Students must explore the response and come to an agreement as to what the response is; then tap the response and, if it is right, a will occur. If it's incorrect, they should debate it again and peck their response until they get the correct response. This provides learners the exercise of protecting their own thinking and potentially also being persuaded that someone else's response is superior to their own. This activity proof as to why their alternative is superior. This method enables them build their capacity to put forward an assertion and protect their reasoning in writing.

III. SUMMARY

Critical thinking is recognized as one of a university graduate's fundamental skills, and most universities designate their graduates to have the skills. This skills must be reinforced by the design of learning activities such as assessment. A teacher should mobilize students' critical thinking through the ability to analyze, evaluating and creating which are part of the revised Bloom's taxonomy. The Revised Bloom's taxonomy is broadly used in educational field that guides teachers to design and implement such an assessment to drive students' critical thinking. The assessment must recall the ability of the highest skills in the taxonomy namely analyzing, evaluating, and creating. The examples of assessments presented in discussion clearly demonstrate how the use of the revised Bloom's taxonomy in assessment recall and promote students' critical thinking. The promotion is indicated how students respond to the activities which expose their analyzing, evaluating, and creating skills. By familiarizing students with Bloom's questioning in assessment, they are getting used to reasoning, expressing with logical arguments, giving idea with clear and systematic thoughts, presenting well-endorsed commentary to convince the audience. Within the revised Bloom's taxonomy in assessment students are stimulated their critical thinking through their response of assessment activity.

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