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QUALITATIVE FRAMEWORK: AN APPROACH TO THE EVALUATION OF STUDENT'S WRITTEN OUTPUTS

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Abstract

This paper sought to apply a qualitative framework using a directed approach to content analysis in the evaluation of learning. It addresses the need to establish standard indicators in evaluating students' written outputs such as assignments and exams. The written outputs of students in an online course on educational philosophy were analyzed to determine the manifestations of recalled knowledge, construction of knowledge and understanding, and levels of cognition with reference to Bloom's taxonomy of educational outcomes. The analysis includes a multi-step process. Initially, it involved the examination of words, phrases and sentences that were used to express key ideas and concepts related to the theories covered in class, as a way of determining the initial coding categories. Identified were statements that reveal the students' understanding of the course content as well as their interpretations. Marked or noted were reactions, insights, opinions, realizations and new learning, whether implicit and explicitly expressed. At this point, the analysis revealed the levels of cognition where construction of knowledge and understanding occurs, whether lower or higher order thinking. The next step involved a new set of codes that took cognizance of the process of relating newly acquired learning to existing knowledge that manifest students' point of view and active construction of knowledge. The inquiry revealed how students demonstrate levels of cognitive presence, meaning making, linking and associating, higher order thinking, use of principles, reflective learning, as well as change in individual perspectives. Formed were the standard features of the qualitative framework for evaluating student's written outputs in order to determine active construction of knowledge.

Keywords: *Qualitative framework, evaluation of written output, content analysis, knowledge construction.*

1. Introduction

In the conceptual map of teaching and learning, the function of evaluation is engraved, presumably, as a continuous process, the purpose of which is to measure what has been learned during the term or course. Learning manifested by change in behavior is relatively easy to judge, but change in mental structures or thinking is difficult to assess. There are issues of ambiguity of standards and bias in the marking and grading written output.

From our experiences in working with a group of tutors, we talk about classroom assessment and evaluation with reference to performance and ratings. Practically, at the end of the semester, summative assessment of learning is done through final exams. Generally, various types of tests are given to students upon which evaluation is usually based. Written outputs such as reflection papers and essays are expected to reveal what has been learned or not learned. While evaluation should give value to the learning and achievements of students, we realize that it requires metrics using a set of standards. It is understood that marks or grades should be just and fair, and this presupposes an objective process of generating values. Unfortunately, the process is faced with two primary issues: a lack of exact measures, and bias due to doubt. This is because there are no clearcut answer keys, which leads to subjectivity.

The lack of a defined set of criteria or standards, or specific rules could create an attitude of intuitively knowing what to do which leads to a hit-or-miss practice that produces judgments without evidence. This is definitely a disadvantage on the part of the students. Even if teachers and tutors ascribe to a particular rubric as a scoring guide, often there are well-defined and clear criteria. Interpretation can be arbitrary, depending on the teacher's mood, mindset, and other conditions that influence scoring.

We noted that even in the use of rubrics, the room for interpretation opens to bias. There can be arbitrariness in the understanding of its construction in the mind of the individual who marks, or the teacher who evaluates, and of the students as well. According to Malouff (2008) bias in grading can be conscious or unconscious. It is influenced by prior experience or beliefs and strong personal opinion about particular topics. In the qualitative tradition of evaluation subjectivity in grading or marking written outputs like essays or final exams cannot be avoided. Personal views can creep in the judgment without consciously noting it. Studies of actual grading have produced mixed evidence regarding the existence of bias (Malouff & Thorsteinsson, 2016). The manner in which teachers mark the written outputs of online students is unclear or unexamined. Huot in 2002 noted that there had been limited number of studies verifying the features of written outputs. To date, the search for related studies yielded scarce results.

The desire to manage the felt inadequacies or lack of fundamental basis in marking students' exams became the motivation to construct an approach for evaluating written outputs. We address the following questions to guide the inquiry: What should we expect to read and assess as evidence of learning in the written output? Specifically, what features should we look for in written outputs? What patterns of cognitive learning are manifested in the written outputs?

2. Literature review

Biggs, Telfer, and Moore (1993) gave account of two (2) traditions of evaluation: the quantitative and the qualitative. Both have their own features with specific attributes. The quantitative approach is known to require how much of the facts from the instructional materials had been assimilated and accumulated. The assessment is commonly in the form of objective tests such as multiple choice or item selection, identification, calculation, or tests that considers what is right or wrong. Often times, learning is rote or belonging to lower order thinking.

On the other hand, the qualitative tradition shows not only what has been accumulated and assimilated, rather it is directed on the content, how it is understood and interpreted (Biggs, Telfer, & Moore, 2003). Assessment delved into the abilities of the students to construct knowledge and levels of cognitive development. Students learning features higher order thinking. Incidentally, inquiries specific on the qualitative approach of evaluating students' outputs are limited. Academic researchers find evaluation as the field to look for when interested to determine the students' development and progress in academic performance. Decades ago, researchers noted that our knowledge of the process of learning and instruction have substantially developed (Sheppard, 1991; Biggs, Telfer, & Moore, 1993). However, this is not manifested in the techniques and the models used for evaluating learning.

Experts in the field provide insight on the use of frameworks for the evaluation of students' written outputs. The framework is a universal and essential part of any scientific endeavor, providing a preparatory measure or schema of beliefs ideas and principles, or a system of rules from which a plan of action or decision making is made. In a review, Partelow (2023) cited Schlager (2007) that in empirical studies, the framework provides a foundation for inquiry. They can guide researchers in designing new empirical research by indicating which core concepts and relationships are of interest to be measured and compared. According to Binder et al. (2013) a framework provides a set of assumptions, concepts, values and practices. It is a means to organize diagnostic, descriptive, and prescriptive inquiry, providing the basic vocabulary of concepts and terms to construct the causal explanations expected of a theory (McGinnis & Ostrom, 2014).

Can there be standard indicators for marking students' assignments and exams and other written outputs? A qualitative framework can be the answer. It can provide a set of criteria from which any teacher can be able to assess with confidence the learner's output particularly the written final exams. This study sought to demonstrate how a qualitative framework can be used in the assessment of student learning

3. Method

This study used a qualitative framework as an unobtrusive approach in assessing student learning. It ventures into the application of a directed content analysis of the written exams of 26 students in an online course in Philosophy of Education. Permission to use the student outputs was acquired at the start of the course. Students raised no objection regarding the use of output materials for research purposes.

The revised Bloom's taxonomy of educational objectives served as theoretical framework as it provides a basis for determining a system of rules to gauge cognitive learning. The framework was positioned as basis for assumptions, concepts, values, and practices in the identification of the cognitive levels, and the preparatory identification of the level of understanding of the subject matter. There are six (6) cognitive processes defined from low to higher order: remembering, understanding, applying, analyzing, evaluating, and creating (Anderson & Krathwohl, 2001).

4. Process of analysis

The written outputs of students in an online course on educational philosophy were analyzed to determine the manifestations of recalled knowledge, construction of knowledge and understanding, and levels of cognition with reference to Bloom's taxonomy of educational outcomes. In preparation for the analysis of the data, the sentences in each exam paper were numbered and analyzed. The written outputs contained a minimum of 13 sentences and a maximum of 84 sentences. Most, a written output contained 35 - 48 sentences.

The analysis involved a multi-step process where each step of the identified a cognitive level.

- The first step was examining and marking of the words and phrases in each sentence that were used in expressing key ideas and concepts related to the theories covered in the course.
- Then, the next step involved the identification/coding of statements that indicate the students' cognitive action:
    - Remembering an understanding of the course content as well as their interpretations (i.e., definition, interpretation, rephrasing).
    - reactions, insights, opinions, realizations, suggestions, and new learning, whether implicit and explicitly expressed.
- These were then matched with the levels of cognitive outcomes in Bloom's taxonomy. This analysis revealed the levels of cognition, as well as whether lower or higher order thinking.

A. Remember or recall	(R)	D. Analyze	(An)
B. Understand	(U)	E. Evaluate	(E)
C. Apply	(Ap)	F. Create	(C)

- The next step involved a new set of codes identifying relationships between previously known and new understanding including change in attitude or point of view.

5. Findings

Several patterns on how the students composed answers to the exams were identified. Among the 26 students' written final exam, ten (10) or 38% of the students had exams that manifested the pattern of Understand-Apply-Analyze-Evaluate-Create or **UApAnEC.** This was the dominant pattern. Another pattern that surfaced among seven (7) or 27% was Recall-Understand-Application-Analysis-Evaluate-Create or **RUApAnEC** pattern. In this pattern, the presence of Recall (R) made a difference. The recall was about work-related experiences in school when they were students. Another pattern that turned up was the **UAnEC** for five (5) or 19.% for the Understand-Analyze-Evaluate-Create pattern; it lacked the application level. Apparent in all the patterns were the presence of Evaluate and Create statements. These cognitive levels are considered as belonging to higher order thinking skills, indicative of quality student learning. The four (4) remaining students manifested varying patterns of four levels of thinking. Altogether, these patterns of thinking reflected in student written outputs provide valuable insights about how learners think about what they have learned. What they have written provide evidences of what they understood, as well as how they processed new knowledge and understanding.

6. Discussion

The process of analysis revealed students' cognitions in answering the exam questions. It demonstrated students' levels of cognitive presence, meaning making, linking and associating, higher order thinking, use of principles, reflective learning, as well as change in individual perspectives. Among the indicators are the use of course terminologies and principles which led to making associations and relationships. As sentences relate to each other, there is the inevitable formation of main ideas and themes (Biggs, Telfer, & Moore, 1993). In their responses, the students used course terminologies to show knowledge about the discipline such as essentialism, existentialism, pragmatism, progressivism, and various related philosophical perspectives that governed teaching and learning. In addition, students expressed inclinations towards progressivism and existentialism or eclectic approach to explain their philosophical orientations. A few mentioned and described specific approaches and strategies like student centeredness which they applied and found helpful in teaching and learning when asked about formulating possible solutions to address educational issues. This is an expression of arriving at a new understanding of the concepts. The familiarity of the jargon of the course enabled the learners to make new associations and relationships.

In understanding the course content, information processing took place as the learners went into the process of retrieving from memory the stored knowledge and experiences considered to be relevant. Those who tended to retrieve ideas and thoughts learned and acquired from instructional materials or other learning resources. They interpreted theories and principles by association or wove knowledge with personal beliefs, events in the work place and experience, validating their understanding of the instructional materials. Such manifested thinking signifies impacts and transformation on the life of the individual. Thus, the transformation of learning materials was evident from lower levels of understanding to higher levels of evaluation, reflection and creativity. As such, the analysis of content indicated the depth and breadth of integration, albeit performance of students in the course. The ultimate demonstration of learning was in the creative application of the knowledge of concepts and principles.

7. Qualitative framework

Inferred from the processes of cognitive analyses of the content of student exams, we were able to extract the framework we found very useful in marking the final exams.

Figure 1. Qualitative Framework- an approach to the evaluation of student's written outputs.

	Bloom' Cognitive Process Dimensions	**Qualitative Framework**
Students' Exams	➢ Remember ➢ Understand ➢ Apply ➢ Analyze ➢ Evaluate ➢ Create	A. Levels of Cognitive presence B. Transformation of instructional materials involved: ➢ Use of principles, terminologies ➢ Linking, associating, making relationships ➢ Realizations & new interpretations/reflections/meaning making ➢ Construction of knowledge /formation of new ideas / themes ➢ Change in mindset or perspective

Every statement in the students' written final exam was the subject of analysis. Bloom's taxonomy was applied to determine and identify qualitative cognitive levels. In the qualitative framework, the knowledge levels indicated the use of principles and terminologies in the academic discipline. The knowledge acquired from the instructional materials is transformed in the manner students weave ideas and concepts which involve linking or associating of understood principles, realizations and new interpretations, reflections and meaning making to previous learnings and experiences. Moreover, to show abilities on higher order thinking, students expressed judgment and decisions as in "I believe…, I favor…, I am inclined…". This unveils change in mindsets and perspectives. In the receiving feedback, students can learn the quality of what they have written when marks area warded appropriately.

8. Conclusion

The processes of analysis of text were an eye opener for the researcher. It provides a rationalized method for evaluating student written output, as well a clear set of criteria that reduces the risk of ambiguity and bias in marking exam papers. The task of inquiry summons a deep process of understanding the content, reflection, and objectivity. It involved critical reading and reading to cognitively empathize. To be able to do these, repetitive reading of the student's output was necessary.

One of the highlights in the use of qualitative framework are the cognitive patterns in the construction of knowledge and formation of new ideas and themes. The identification of these levels of cognition provide insight into the students' flow of thoughts while expressing their ideas in writing. It also inspires the conscious effort to add another aspect to complement the existing rubrics that are in use. It implanted a new way of doing something in clarifying the felt inadequacies while marking the written output.

We wish to promote and consider the cognitive processing of information as a qualitative approach to the evaluation of what has been learned. This method of evaluating student's written outputs is a qualitative measure that determines the development of understanding about the material and the subject matter taught in the classroom. It becomes important to consider the manifestations of learning in terms of the processes of cognitive levels that takes place in the written outputs. It offers a new guideline for the

practical issues on the arbitrariness that confront the marker and the teacher when evaluating students' written work. The cognitive processes show learning and utilization of materials in the individual context.

As we emphasize the value of a qualitative framework to marking and evaluating written outputs, we are made to realize that we have to continue looking for alternative approaches that are specific and well defined, and bound to keep up with the changing needs and development of our students. This has implication also to the questions designed by the teacher. They should be broken down into smaller chunks to provide guidance and elicit specific answers to posted questions.

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