DIGITALIZING FORMATIVE ASSESSMENT QUESTIONS BANK WITH QUIZZIZ

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Abstract:
Some teachers have always been encountering difficulties in writing an assessment especially a formative assessment. It is apparent that assessment is necessary to measure the achievement of learning objectives in teaching and learning to meet today's needs. This study aims to scrutinize the current books of question bank products as a benchmarking and attempt later on to design a preliminary digitalized question bank form to help teachers conduct formative assessments. The study uses research and development model and qualitative approach. It applied three phases of Borg & Gall's theory: research and information gathering, planning, and preliminary product development. Documentary data collection techniques are used to identify the characteristics and limitations of the question bank. A critical literature review and qualitative item analysis were used to analyse the data. Twenty-six question bank indicators were identified from a review of related literature. Twenty-six indicators are used to investigate weaknesses in current question bank products. Ten shortcomings were identified in both products meanwhile the second product has fewer defects than the first. The preliminary form of the digitalized question bank was designed by adapting existing products and overcoming their shortcomings. Forty entries were written and displayed in a test. The developed items are characterized to be more relevant to higher-level thinking which is analysis level cognitive domain about 48%. In addition 52.5% of the developed items are identified as medium difficulty.

Keyword: digital, banking, formative assessment

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INTRODUCTION

In the ever-evolving landscape of education, the integration of technology has brought about a paradigm shift in the way we teach and assess student learning. One significant advancement in this realm is the digitalization of formative assessment through platforms like Quizizz. This transformation not only enhances the efficiency of the assessment process but also empowers educators to engage students in a dynamic and interactive learning experience.

Formative assessment plays a pivotal role in gauging students' understanding of the subject matter in real-time, enabling teachers to adapt their instruction accordingly. The conventional question bank, once confined to textbooks and printed materials, has now found its way into the digital realm. Quizizz, a popular digital assessment tool, has emerged as a game-changer, allowing educators to create, manage, and administer formative assessments effortlessly.

This journey of digitalizing the formative assessment question bank with Quizizz promises to revolutionize education by fostering a more interactive and data-driven approach. In this exploration, we will delve into the myriad benefits of Quizizz in enhancing formative assessments, discuss the process of creating and utilizing digital question banks, and explore the positive impacts on both educators and students. Join us as we navigate the exciting world of digital formative assessment, where innovation meets education, and traditional question banks evolve into dynamic tools for fostering student learning.

LITERATURE REVIEW

It seems that some teachers in Indonesia today are not proficient in writing evaluations. Mili (2020, p. 145) found that many teachers still struggle with planning and conducting formative assessment. Khairil & Mokshein (2018) defined assessment as part of a teaching and learning process designed to help improve both the assessor and the assessed. In addition, formative assessment is very important for teachers and learners to measure their learning progress. Assessment feedback provides the basic information for modifying teaching and learning measurements in the following activities: Black & William (2009) argue that formative assessment is when evaluation about student learning activities are drawn, reasoned about, and used by teachers or students to make decisions about next steps in subsequent teaching and learning activities. has been discovered (p. 7).

Nonetheless, current designs of assessment systems use multiple-choice tests to test facts rather than adequately measuring students' ability to tackle and complete complex reasoning and problem-solving tasks. emphasis on measuring students' ability to retain (Winaryati, 2017, p).62). As a result, there is a gap between the knowledge and skills students acquire in school and the knowledge and skills students need in the workplace in the 21st century. The 2013 curriculum introduced Higher Order Thinking Skills (HOTS) at all levels of education to improve students' comprehension and critical thinking (Lestari et al., 2018, p.11, p.499). Higher level thinking is an important applicable skill that should be

developed during the course of teaching and learning in schools (Suryani et al., 2019, p. 1).

Collecting the number of questions makes it easier for teachers to complete exams. As pointed out by Hayati & Mardapi (2014), a question bank is a collection of test items related to question creation that facilitates teachers to compile questions and use them as assessments for each exam (p. 29). According to Sumardyono & Wiworo (2011), a question bank is a set of both theoretically and empirically calibrated (tested) items that are important for easy use in the preparation of assessment tools (tests) (p .9).

On the one hand, technological developments emphasize the need for educators to make the most of technology in the teaching and learning process, including assessment. Irawati & Fitriati (2018) found that one of the most common challenges faced by test takers is students' lack of interest in answering questions. Questions appear monotonous and less interactive, affecting student learning outcomes that stagnate and decline. Therefore, the development of formative assessment using interactive assessment platforms is necessary. There are dedicated applications and software evaluation tools such as Quizizz, Kahoot and Quipper (Amalia, 2020, p.11). 2). Rahayu & Purnawarman (2019) found Quizizz to be a great online assessment tool for measuring students' English learning proficiency and progress. Teachers can use her Quizizz to provide assessments and give students homework for additional practice (p. 103).

In summary, this study attempts to develop a question bank as a formative assessment for 8th grade college. The researcher has created a preliminary question bank to help teachers easily pass the assessment. The question bank featured product was designed using the results of qualitative item analysis and critical literature review.

METHOD

The research and developments (R & D) model and qualitative methodology were used in this study. An R&D model is utilized to align with the product to be developed. According to Gall, Gall, and Borg (2003, p. 569), educational R&D is an industry-based development method in which findings are used to create novel products and methods, which are then field-tested, evaluated, and improved until they satisfy specific efficiency, quality, or other requirements. A descriptive procedural model that highlights the phases of product creation, planning, action, and product evaluation is how Lestari et al. (2018) characterized the R & D model (p. 500).

In research and development models, the research activity consists of specific steps. The researcher used Borg & Gall (1983), cited in the theory of Gustiani (2019) as the basis for the research method in this study. The Borg & Gall study presents 10 steps towards the R&D model. However, the researcher did not take all 10 steps; researchers use only three stages like Hidayah, Ramli, & Hanafi (2018) adapts three steps from the theory of Borg & Gall (1983): Research, collect information, plan, develop preliminary form of product. In addition, the researcher also uses the Selection Table and the Category Index Analysis Checklist as research tools; The panel selection used to review related literature contains

accepted literature criteria for the research sources, while the item index analysis checklist panel was used for qualitative investigations. the bank's omissions in the questions.

Additionally, the researcher uses a critical literature study to examine pertinent documents that the data manifest in the form of product features. In order to analyze the data from Efron & Ravid (2019, cited in Nashruddin & Mustaqimah, 2020, pp. 83–84), the researcher followed six procedures. Before being added to the table of item indicators analysis checklist, the product's characteristics are the end result of this critical literature evaluation. The researcher also performs a qualitative item analysis to look at the drawbacks of question banks. According to Widana (2014), qualitative item analysis seeks to ascertain whether a question will work as predicted, determine the homogeneity of the test's items, and evaluate each item's relevance to the test's purpose, design, and other factors.

FINDINGS AND DISCUSSION

Analysis of existing books of question bank

Using an item indicator checklist, the researcher qualitatively examines item questions. As previously mentioned, indicator checklists were developed after examining pertinent literature; 26 item writing criteria were determined, and grouped into the following three categories: content and substance, construction, and linguistics. Two question banks from various publishers are the subject of the object analysis in order to compare them. The researcher examined the first chapter of those products, which shared the same fundamental skills, subject matter, and precise item formats. Twenty items from the first product and forty items from the second product were examined out of the sixty multiple-choice questions. The first part of the study concentrated on analyzing formative exercises that were multiple-choice covering with the basic competences of 8th grade of junior high school. The competencies encompass four content areas which are asking and giving attention, checking someone's understanding, giving compliments, and asking giving opinions.

The study discovered that out of 26 indicators, products one and two both had 10 (38.4%) and 9 (34.6%) missed indicators, respectively. So, compared to product one, product two has more engaged signs. The disadvantages of products one and two are as follows: The first weakness is in the way the cognitive levels are composed; product one has nine more C2 understanding level items than other levels (45% more), whereas product two has 30 more C3 applying level things (75%) than other levels. The second weakness is that both products contain options that provide hints for the right response; product one has eight (45%) options. Product 2 has 14 items (35%), in contrast. Thirdly, both goods include a variety of possibilities in terms of content and grammatical construction; product one has eight items (45%), whereas product two has fourteen items (35%). The fourth flaw is that the selections for both products are not essentially the same length; product one has six items (30%) and product two has.

Sixthly, neither product contains clear instructions or the item's primary idea in the stem; product one has four items (20%), while product two has four items (10%). The seventh flaw is that neither product offers independent options; product one only has one (5%) and product two only has two (5%). The eighth flaw is that both goods contain unrealistic distractions; product one has six (30%) and product two has eight (20%). The ninth flaw is that both goods feature stems or alternatives that are grammatically incorrect; product one has one (5%) and product two has two (5%). The final flaw is that one item (5%) in Product 1 was recognized as having improper spelling.

The development of question banks for formative assessment

The product design was created by taking into account 26 item writing guidelines and ten inadequacies identified in existing question banks. Product identifications, forty item indicators, and twelve item cards are also included in the list of product specifications. Additionally, the researcher modified the current products to create a new product, and the finalized item is showcased on Quizizz.

However, there are some differences between the developed and existing products, including the number of items, the number of options in each item, the number of distractions in each item, the composition of the cognitive levels and level difficulties, the type of question bank, and the type of media documentations. Additionally, to make things simpler, the researcher splits those into two categories: documentation for question banks and indicator rules (including content, construction, and language and grammatical requirements).

Content, construction, language, and grammar make up the first component. Based on the core competencies of asking and giving attention, checking someone's understanding, giving compliments, and asking giving opinions, the researcher created forty detailed items, ten on each area, with each issue having five alternatives and four distractions. Most state achievement examinations, college admission exams, and professional licensure and certification exams use the typical multiple-choice (MC) question, which comprises four or five options (Rodriguez, 2016, p. 264). Since higher-order thinking is a prerequisite for the 21st century, the researcher will create a question bank using items with five options, which suggests a higher degree of thinking. Comparatively to other goods, the produced question bank has seen more use of applying (C4), which is a higher-order thinking talent. The cognitive component of applying (C4) is composed of remembering (C1) 4 items, applying (C4), and applying (C4). The expanded question bank is more structured with 21 average (52%) questions while difficult, 15 (37.5%) and easy level 4 (20%). In addition, the composition of the difficulty level is as follows: 15 difficult elements, 21 medium elements and 4 easy elements. Below is an example of an item that reflects Core Competences 3.1 and 4.1, reflects the Applied Cognitive Level (C4), has five choices and four distractions, and reflects a specific level of difficulty.

The type of question bank and the type of media documentation are the second difference between the proposed and current question banks. The researcher showed items from the computer-based question bank category on the Quizizz application. As part of formative evaluation in the classroom, Quizizz is a web platform for building interactive quiz games (Suhartatik, 2020, p. 14). The question

banks of Quizizz are depicted in Figure 1 below, along with some of their features; in general, there are two basic components to testing: a live quiz and homework assignments (asynchronous learning). According to Muji, Ambiyar, Aziz, and Hidayat (2021), a live quiz and a homework quiz are two different ways that Quizizz implements tests. For the live quiz, the teacher provides the quiz link, and students complete the quiz at home.

Figure 1 The quiziz application

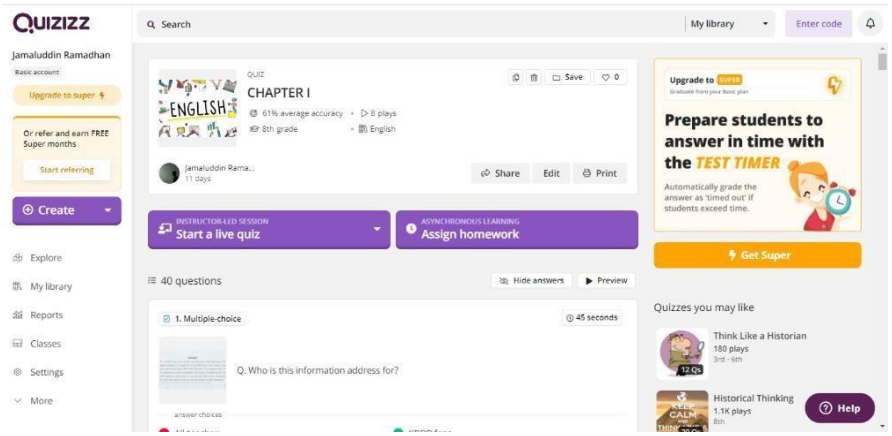
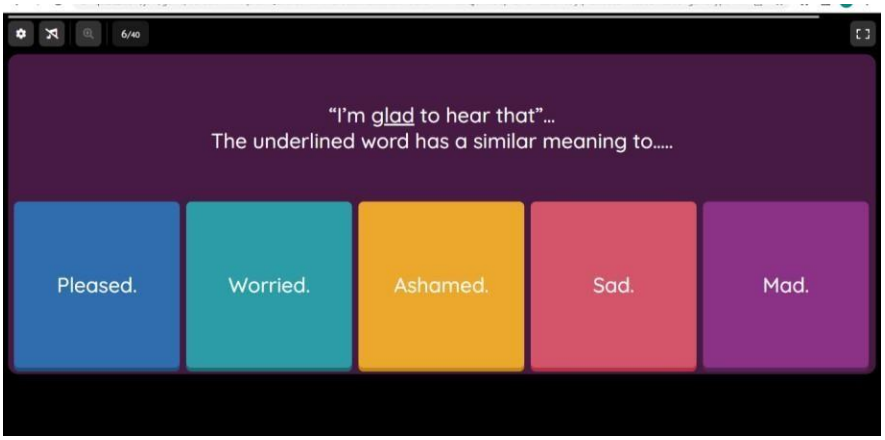


Figure 2 The item test of quizizz



In addition, there are many advantages to using media quizizz as an assessment tool. Not only is the application appealing to students, but it also has features that can help teachers, such as performance statistics and a summary of the game (score and rank) (Rahayu & Purnawarman,

2019). The feature of test-takers' scores and rankings is shown in figure 3 below; with this function, teachers could assess students simply by looking at the outcomes and performance statistics on the screen (see figure 5). Additionally, since the score and rank are displayed right away after answering questions, this feature pushes students to learn. Amalia (2020, p. 6) remarked that Quizizz also inspires students to learn by letting them compete with one another.

Figure 3 The leaderboard of test-takers performance

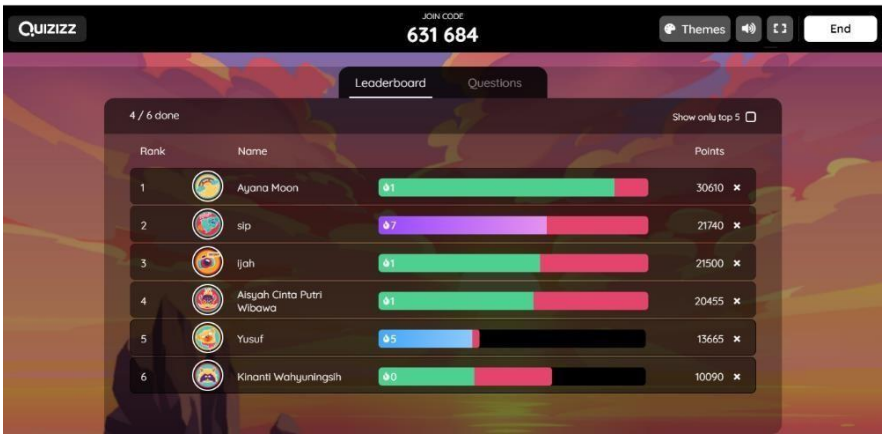


Figure 4 The summary of test results from test-takers

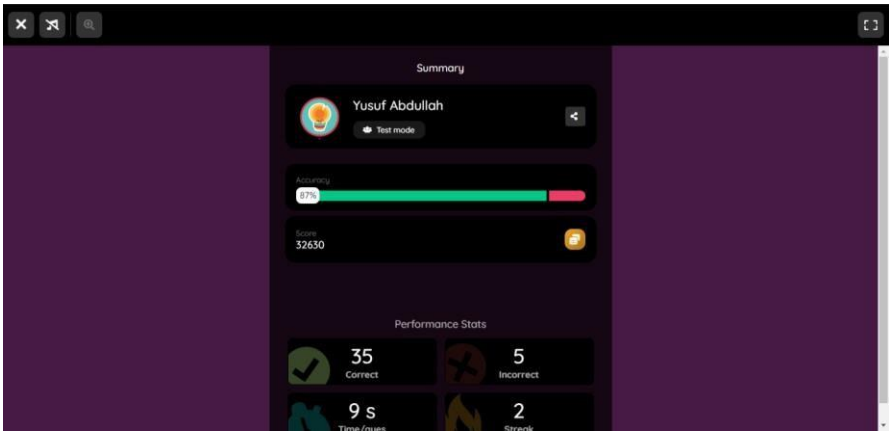
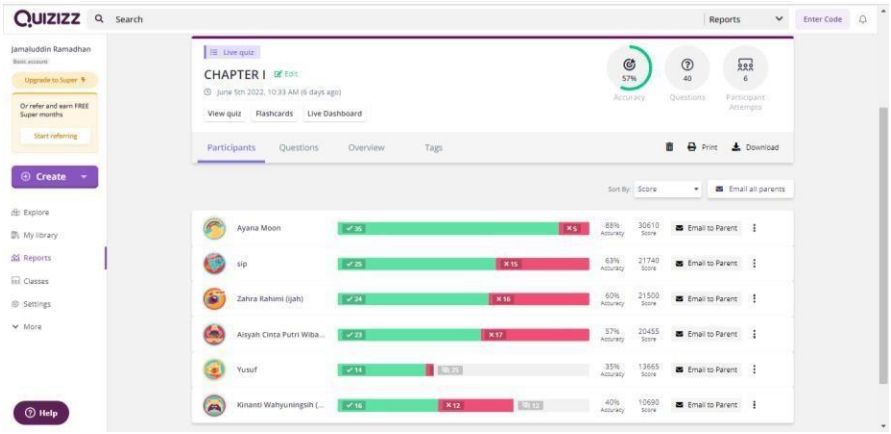


Figure 5 The summary of test results from teacher



CONCLUSION

In order to identify the flaws in each product, the researcher analyzed sixty items from two current question bank products. The analysis revealed that, out of twenty-six indicators, ten were missed in each product, with product two missing nine (34.6%) and product one missing ten (38.4%). As a result, product two has more engaged indicators than product one.

In addition, the researcher created a question bank with forty items, forty item indicators, and twelve item cards. These question banks were created using product specifications and had product identifications. Additionally, there are differences between the drafted product and the existing products in the composition of cognitive levels, the composition of level difficulties, the number of total items (20–40 in the existing products vs. 40 in the drafted product), the number of total options in an item (4 in the existing products vs. 5 in the drafted product), and the number of total distractor (8 in the existing products) three deterrents The created product is computer-based, whereas the written product has four distractors for each topic and uses the type of question bank that is currently available for paper-and-pencil tests.

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