Conference Paper

Development of Online Exam Questions for Javanese Language Subjects with a Cultural Responsive Assessment Approach

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Abstract

This study aimed to develop web-based Javanese school exam questions using the East Javanese language and emphasizing cultural questions as a form of culturally responsive assessment. This study used the Borg & Gall model development method, which included three steps: the conceptual model, the hypothetical model, and the empirical model. Good scores were obtained from the questionnaire instrument for practitioners. The results of the small group test showed that the mean score of SMKN 3 Malang students in the post-test was 12.11 (19.86%) higher than in the pre-test. The field test of students resulted in a mean of B (good). The form and content of the questions developed in this study can be used as a guideline for other schools in the area, or for other environments that have a similar language and culture.

Keywords: online exam, assesment, Javanese language

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1. Introduction

Language skills have very many uses in life, and we can say that all living systems require language skills. When people do not have good language skills, there will be difficulties when gathering in the community.

In Java, language skills and competencies are considered as one of the skills of every individual. Javanese is a broad language; it has a speech level, namely *ngoko* pronouncing "low-level utterances" and high-level utterances *krama*, which are used as a medium for understanding brotherhood, respect, and hierarchy among speakers [1].

The case among Javanese learning in East Java is considered homogeneous; the learning reference used is the Yogyakarta or Surakarta dialect. Students who learn Javanese are considered their first language as standard Javanese. The fact is that many students living in East Java are mainly used to using Indonesian; besides that, some students also use the East Javanese dialect. Students who study Javanese in

East Java can be divided into three things: language, ethnicity, and Javanese learning needs [5].

Apart from these challenges, Javanese language learning is also faced with the Javanese Language Primary School Examination, which is considered one of the prerequisites for student graduation as an implementation of Governor Regulation Number 19 of 2014. Not all students can accept Javanese language lessons easily. Some students think that Javanese is a complex and challenging subject.

One approach that can be used to appreciate the Javanese Language Exam is the Cultural Responsive Assessment approach. Luykx [2], in his book General Evaluation, describes two ways to reduce cultural bias in conducting academic assessments, namely (1) conducting evaluations based on cultural knowledge of certain groups of students, (2) conducting neutral evaluations; reliance on evaluation tools for cultural knowledge is minimized. The Cultural Responsive Assessment approach in this study uses the method of conducting research based on the cultural knowledge of certain groups of students.

Apart from the Javanese language exam content approach, other approaches were also taken to answer the progress of the times. Witherington [6] argues that technological progress is subject to different assessment practices. Previous forms of evaluation that used pen and paper have now switched to using computers. One of the advantages of a computer scoring system is that student work performance can be processed faster.

From the description above, two things can be observed to develop the Javanese Language School Examination at SMKN 3 Malang, namely, 1) the questions that need to be done must be adjusted to the cultural characteristics of the students, 2) the form of Javanese school exam questions using website-based assessments.

1.1. The Structure

1. What is the form of the Website-Based Javanese Language School Examination with the Culturally Responsive Assessment approach?

2. What is the quality of the Website-based Javanese Language Exam questions according to the Material and Media Experts?

3. The Quality of Website-based Javanese Language School Exam question according to teachers and students?

This paper is structured as follows. In Part 2, we will explain the theory that underlies this research. Section 3 describes the methodology used in this study. Part 4 describes the results of research and development. Finally, at the end of section 5 describes the end of the study which contains the conclusions of this study and suggestions for further research.

2. Related Works/Literature Review

To avoid plagiarism and provide views on the differences between this study and other studies. So the researcher presents several existing studies, which have a research focus similar to this research, namely: (1) Application of CBT (Computer Based Test) In-Network Service Technology Learning at SMK Negeri 1 Tuban. This study discusses the application of computer-based assessment using the Beesmart application. The purpose of this study was to determine student learning outcomes after using CBT. In this application, the questions are packaged more interactively and reduce paper costs. Based on learning outcomes through learning outcomes with posttest given to 35 students of SMK Negeri 1 Tuban, it was stated that student learning outcomes were good because as many students received posttest scores> 80. Student responses to the application of CBT were categorized as good, with a percentage score of 76.17%. With good student learning outcomes and student responses to CBT, it can be concluded that CBT is more effective in helping test implementation. (2) Designing a Web-Based Online Exam Application System at SMA Negeri 1 Kalirejo. This research was conducted at SMA Negeri 1 Kalirejo. In this study, the authors created a web-based online exam system at SMA Negeri 1 Kalirejo. This website-based online exam system development method uses a prototype. The part of the product that expresses the logical and physical interface of the external interface that it displays. The Online Exam System provides the advantage that there is no need to procure exam papers and saves time for exam correction so that efficiency and effectiveness are the goals of making an online exam system. (3) When western epistemology and indigenous worldviews converge: A responsive assessment of culture in practice. This study examines standards-based research and multicultural research perspectives. This study looks at how culturally sensitive estimates can bridge diversity in society.

Of the three studies, it can be seen; two studies only focus on making CBT questions without focusing on content, while one research focuses on content about how culture-sensitive assessments can bridge diversity in society. Based on the three studies above, the researcher tries to accommodate the three studies above in one study. The hope is

that by conducting this research, the researcher can determine whether the assessment should be closer to the culture around students or whether there is no connection.

3. Material & Methodology

The subjects involved in this study were students of class XII at SMKN 3 Malang. The research method used is the development research method, following the model developed by Borg & Gall [7] with research procedures including (1) preliminary survey; (2) planning the model to be developed; (3) conducting product trials; (4) product development; (5) validation test; and (6) socialization and implementation of research results (products). Based on these steps, the research procedure is divided into three main stages. In the first stage, a needs assessment was carried out by analyzing the needs with the following objectives.

1. Identifying the implementation of the learning process carried out at SMKN 3 Malang.

2. Identifying the infrastructure (media) used in the teaching and learning process and Javanese language assessment at SMKN 3 Malang.

3. Identify the assessment model used in the Javanese language learning process.

4. Identify the impact of implementing the assessment model used.

The second stage is developing the first phase of research; the steps are as follows.

1. Develop a Javanese language assessment website for SMKN 3 Malang in collaboration with Masterweb developers.

2. Develop a manual for the operating system of the Java language assessment website.

3. Compiling the content of the Javanese language assessment website with questions that use the East Javanese language and the arek culture.

Validation of the three products mentioned above by involving experts such as R&D, learning and learning experts, and design experts so that the two products have content validity can be accounted for. The third stage is the stage of conducting trials (experiments) on (1) the use of Javanese language assessment websites and (2) question content that contains Javanese culture and language. The data source in this study

is primary data (obtained from observations and interviews with Javanese language teachers and students of SMKN 3 Malang class XII), while the data collection techniques used are through observation, tests, and interviews.

To get data as reinforcement for the third stage in this study. When running the test, the researcher used a purposive sampling method. At first, the researcher tried out the website using questions without adjusting the language and content. Furthermore, the researcher eliminated students who had filled out the test and selected 26 students who were obtained from 10% of the total number of students who took the test to undergo the test at a later stage. Elimination is based on a specific purpose. Student characteristics that are considered include:

1. Students who are immigrants in the city of Malang.

2. Students who are native Malang citizens (born and raised in Malang)

3. Students who have not received Javanese lessons since SD and SMP.

4. Results and Discussion

4.1. Results

4.1.1. Examination website views

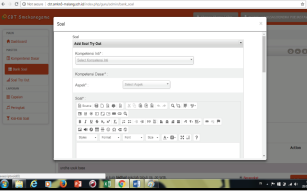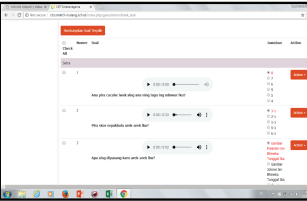The following is a web-based online exam view that has been designed at SMK Negeri 3 Malang:
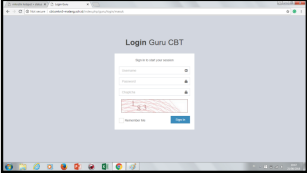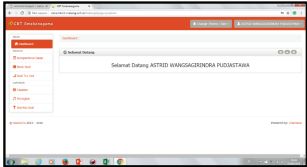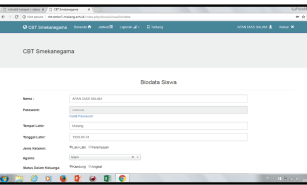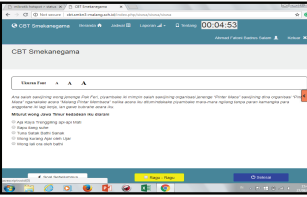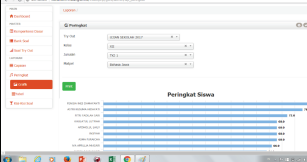
4.1.2. Fill in the exam question

The resulting questions are computer-based school exam questions with a source of local knowledge material in the Malang region, and the language used in the next question is the language of the East-Javanese dialect.

4.1.3. Prototype Test Results

A prototype test was carried out, namely the assessment of level I users consisting of 236 students who were all students at level XII at SMKN 3 Malang. From the test results, several questions were often missed. The frequently asked questions are questions where the number of correct answers is less than 50% or less than half the number

TABLE 1: Web-based online exam view

No.	Website Views	Description
1.		The application starts by displaying the login page before users (students, teachers, admin) access the dashboard with different access rights. After the user logs in by entering the username and password, then they can enter the dashboard menu.
2.		After the admin user enters the dashboard page, there is a select menu according to access rights. The teacher dashboard page has access to question data and can make questions, exams, and determine the exams to be carried out and exam results.
3.		After the teacher enters the dashboard, the teacher can create questions by selecting the question data menu and selecting add questions. Figure shows the fields that must be filled in by the teacher in making questions, namely subjects, teacher's name, picture of questions (if any), weight of questions, questions, and answers. Each teacher has the right to create, edit, and delete the questions he makes.
4.		After the teacher makes the exam questions, there is a list of the question data that has been made. Question data is displayed based on basic competencies.
5.		On the student dashboard, it will only be shown on 2 menus, namely the dashboard as the home page displaying the name, username, the subject being taken, and the exam menu for each student to carry out the exam that has been held by the subject teacher.
6.		After students log in and take the exam that has been made by the subject teacher, students must work on multiple-choice questions randomly and are given time according to teacher policy when making the exam.
7.		After all, students have taken the exam, the teacher can see the results of the previously made exams on the exam results menu. Figure 8 shows the display of the Javanese test results. Teachers can also print exam results by clicking print which is located on the top right of the exam results menu.

of students who answered the question. On items that are often overlooked, the data is divided into four parts, namely question numbers, questions, correct answers, and

TABLE 2: Brief overview of question content

Exam Question Number	Test Question Indicator	Brief Overview of Question Content
2.	Presented a text of the puppet story, the learner is asked to determine the mandate within the text presented.	The story of the puppet story that was chosen tells the story of Karna's death because when the students of class XII went to class X told the cinema Mahabharata on ANTV became popular and the episode was among the most talked about.
14	Presenting a listening question, learners can see the background of the conversation.	During the audio-visual piece of the presentation, the learner is asked to identify the background of the place where the talk is to be made. Conversations are selected using a variety of eastern languages that are commonly used.
16.	Presented as a matter of listening, learners can identify the type of sekar macapat.	In the audio of one of the accelerator tunes that the learners listen to find the type of *sekar macapat* mentioned. The type of *sekar macapat* that is heard is the *sekar macapat* that is often taught at the previous level of education.
39.	Given the type of performing arts, learners can limit the choice of images, to reflect the cash characteristics of the performing arts.	Depending on the number of visual art images displayed, learners are asked to select an image that does not belong to the visual structure intended in the question. The art of visual art that is captured in the art of ludruk art. Students of SMKN 3 Malang themselves have also performed independent performances of ludruk visual arts every year as the final task of teaching cultural arts.

question indicators. These four points were selected to facilitate analysis and reply to frequently asked questions. The following are examples of questions that are often overlooked.

TABLE 3: Results of the Prototype Trial of the questions

No. Question	Question	Correct answer	Test Question Indicator
3.	The following words are true except	92 / 236	Presented in drama tex, students can detect errors in the use of linguistic rules in these texts.
5.	Wis dadi "Sabdå Pandhitå Ratu" yên kabeh iki kudu tak lakoni, bebåsån aku kudu mlaku menyang tanah suci yå kudu tak lakoni". Ature Yudi ngagetakè. Têmbung "Sabdå Pandhitå Ratu" dhuweni têgês	101 / 236	Presented a word, tudents can explain the meaning of the word.

The student's choice of answer choices is used to indicate the exact number of presentations in each question. It is important to see how many languages and cultures are used to make it easier for students to work on problems.

TABLE 4: Range of student answer choice

No.	List of Student's Answer Choices	Percentage is correct
1.		81,8%
2.		86 %

4.1.4. Revised Version Test Results

The evaluation results on the pretest and posttest from 26 students became the object of the test questions. The 26 students were selected students based on the criteria previously described in the research method. The researcher took the 26 students from 10% of the total students who had taken the prototype test results. The percentage of the pretest and posttest scores achieved with the test scores of 26 students of class XII SMK Negeri 3 Malang is presented in table 4 as follows:

The test evaluation results and post-test on the 26 students who were the object of the test questions showed an increase in their average score. The addition in the average post-test to pre-test was 12.11 or 19.86%. This result tends to change because after conducting User Test II the researcher looks back at the specific questions in the Frequently Asked Questions and Analysis of Daily Questions sections. In these questions, negative questions were found, such as which choice questions used diction

TABLE 5: Pretest and postest score

No.	Student's Name	pretest	postest
1.	Laras Kinanda	80	85
2.	Esa Rusita	65	75
3.	Intan Septi Indriyani	70	85
4.	Brenda Anastasya Naomi Malonda	55	75
5.	Putri Sekar Arum	70	75
6.	Salsabilla Emilia Chusna	75	65
7.	Deswita Dianti Maghfiroh	60	75
8.	Heryani Miftakhul Tafsir	75	65
9.	Fadilla Dwi Maretha	50	65
10.	Inka Nava Sarizky	70	75
11.	Mochamad Wildan Bagus Santoso	65	65
12.	Nurul Lutfiah Agustin	65	80
13.	Yeny Reza Dwiningsih	45	80
14.	Nurul Lutfiah Agustin	75	75
15.	Aulia Bilbayyanah	60	80
16.	Reza Adela Artha Mevia	80	75
17.	Fera Ayu Nuraida	50	75
18.	Jihaan Haniifah Christyodetaputri	35	65
19.	Martina Dwi Rohmatin	55	75
20.	Nur Rania	60	75
21.	Annisa Purwachinta Terangisantika	70	75
22.	Aurellia Nathasa Paramita	50	75
23.	Melania Larasati	50	80
24.	Bunga Putri Suri Pratiwi	50	75
25.	Nabila Aprilianda Putri	65	75
26.	Gerald Jourdano Erlambang	40	65
	Total	1585	1900
	Average	60,96	73,07

except and which one was wrong. The questions are then replaced with positive questions.

The form of questions contained in the questionnaire is positive or negative. Positive questions, for example: "I often visit body shop outlets." Negative questions such as: "The repair shop can't recommend a good product for my body care needs." That is

done so that respondents are more careful in answering so that there is no consistency in answers [8].

Identify words that have opposing meanings and avoid them according to what we find in the book 1-2-3 Magic Effective Discipline for Children 2-12, which states that thinking, saying, or acting negatively, causes the brain to change and acquire negative information into a type of adrenaline hormone. In tiny amounts, the hormone adrenaline is needed, but it can hurt the body in large quantities. Unlike the case when someone thinks, says, or acts well, the hypothalamus will give orders to produce the hormone noradrenaline, a hormone that produces calm, inner comfort, which is a good indicator of accuracy [9].

The success of the post-test and pre-test reflects the success of the exam questions as an assessment tool for students who have different cultural backgrounds with the content of the questions. Assessment is often carried out using a language that is different from the language commonly used by test takers, using a multicultural language approach. An evaluation should be mono-language and multicultural; however, this would be difficult to assess regional languages, given the diversity of cultures and limited literacy. It should also be noted that most ethnic groups try to use the same language but still come from different groups. Therefore, assessment concerning culture should accommodate the uniqueness of these ethnic groups by creating a monolingual review that adapts multiculturalism even though there is only one language in circulation as described by Tanzer [3].

4.1.5. Student Reaction

After carrying out the user trial phase, the researcher also did not forget to give a questionnaire to see how students responded to the research that had been done. Researchers try to see how students react to a new habit, namely working on problems that use language and culture that they usually encounter every day. The student experience is essential to see to provide a complete picture of the assessment model that is applied. As a result, the researcher got something that was expected in this study. Some students responded positively to the efforts made by the researcher; the students were quite attentive in addition to filling out the questionnaires that were distributed. They also did not forget to give some constructive, positive suggestions.

TABLE 6: An overview of students' reactions to the developed questionnaire model

No	Reaction	Description
1.	**Student interesting exam questions** ■ Excellent ■ Good ■ Enough	Based on Figure, the student assessment in the exam question indicator attracted the students with 25% excellent grades, 64% good grades, and 11% adequate grades. It can be argued that the question of computer-based school exams attracts the attention of students. The frequency distribution of the assessment can be seen in this image
2.	**Easy to Understand Question** ■ Excellent ■ Good ■ Enough ■ Less ■ Very less	The figure shows that the student's assessment of the easy-to-understand question indicator is 19% like good grades, 66% like good grades, 11% like good grades, 2% like bad scores, and 2% like bad grades. From this information, it can be concluded that from the opinions of 26 respondents, the highest frequency is in the "good" category, which means that the computer-based school exam questions are easy to understand.
3.	**Questions related to student life** ■ Excellent ■ Good ■ Enough ■ Less	The choice of questions is based on the social life of students of SMK Negeri 3 Malang. One of the questions that raise this matter is drama material, where the researcher deliberately uses dialogues that are common in SMKN 3 Malang. The figure shows that the student's scores on the question selection indicator are 21% excellent, 45% good, 32% poor scores, and 2% low scores.
4.	**Each question has a different level of comprehesion** ■ Excellent ■ Good ■ Enough ■ Less	Each question is designed to have a different difficulty level starting from C1-C6. This is in line with the realm of cognitive knowledge derived from Andérson's revised Bloom's taxonomy. Based on the picture, it can be seen that the students' assessment with question indicators has various levels of difficulty. 28% of students stated that the setting of the difficulty level of the questions was perfect, 59% of students said that the set of the level of question quality was good, 11% of students said that the setting of the quality of the questions was lacking, while 2% stated that it was very lacking.

4.2. Discussion

The research findings show that students perceive language and cultural adjustments in questions as applicable in an assessment process. We expected this before we conducted this research.

Students' attitudes towards assessment models that accommodate diverse cultures; however, some students stated that the adjustment of cultural content was exciting and fun. Some students gave positive responses, as shown in the student reaction section in the previous chapter.

Working on questions that can accommodate the culture around students is a new experience for many students, and the central aspect of this assessment is to introduce students to a new habit that is that their culture is valuable. Most students reported that they felt the questions were like talking to themselves, but some expressed their discomfort. After the researcher traced it, it turned out that even though the students were born and raised in Malang, their parents were immigrants from the Yogyakarta area, which is undoubtedly different from the question content. The student reported that "the language of the questions was a little rough, and should be refined a little bit."

The research data also shows that students feel that the questions are very close to what they do daily. Researchers then recalled Beaulieu's [4] opinion, arguing that 66% of all programs designed by teachers have nothing to do with the culture around students, and programs that have to do with culture are said to be exclusively a different approach to teaching. Some school programs mostly have nothing to do with culture. Then it will be a question of how teachers increase student attendance and participation in activities held in the school environment if students themselves sometimes think that a school is a foreign place to them. As a critical reflection, the research findings provide a positive picture of how implementing a culturally responsive pedagogy has a positive impact on students.

The problem is that we deliberately lifted it from students' daily lives to get to these valuable findings. That is the same as what was found in Kacerja's [11] research in learning mathematics using his culturally responsive pedagogy approach. Here's what he can convey:

> "I realize that using real-life situations can be a way to prevent students from perceiving that maths lessons are boring and far from the problems they will encounter every day. There are several ways to take this approach: creating a large project with students that will be worked on throughout the school

year, or perhaps a more straightforward way is to develop a topic that is in the textbook, reinforced by a few additional issues. Inviting students to engage and formulate learning that is close to their real-life situations can present an exciting way for students, without the need to fear the effect of resistance from students because students are not familiar with the topic."

Although there are a few negative comments about the research results, as seen in the student reactions section, it should also be noted that even though some of these students stated this, it turned out that these students were also among the ones who got the best scores when the post-test was carried out, this can be understood that they unconsciously support the theory that language and cultural adjustments in problems make it easier for them. They need help to help them see the value of what they are doing on their own.

However, the research conducted by researchers is not without significant challenges. One of the main challenges of applying the assessment that uses the language and culture around one of them is the lack of literacy about language and culture developed in the Malang region. Fortunately, the researchers received valuable assistance from the artists and cultural observers in Malang, whose function was to enrich the material to be included in the questions to be tested. We do this so that later what we put in the questions does not conflict with what students encounter in their lives. That is what researchers do depart from the opinion of Pelkowski [12], which states that teachers need to understand the cultural frame of reference for each student, but not limited to their way of communication, understanding, and learning, this is useful for planning how they will differentiate content, process, or their assessment product.

The experience of using exam questions containing culture-responsive content is also intended to provide students with an authentic assessment experience. Moreover, this assessment was carried out in Javanese language lessons, which are positioned as regional local content that hopefully can teach and provide valuable experiences for students about what they need to know and master related to the culture that develops in their environment. Research also proves that students need to adjust learning and assessment in school with what they encounter and face in their daily lives when they become part of the community.

4.3. Limitation

1. School exams are only assessed by three experts, with the following details: one media expert who is the vice-principal of the curriculum field at SMK Negeri 3 Malang, one Javanese language teacher at SMK level, one professor in the field of East Javanese language and culture, namely Professor Henricus Supriyanto, M.Hum, was then tested on 26 selected students based on predetermined criteria described in the research methodology.

2. The research and development are to adjust the website where the exam questions are placed and create culturally responsive exam questions by changing the content of the questions to their language and culture. Besides, the researcher also developed a questionnaire prepared in collaboration with the MGMP of SMK Jawa at the city level of Malang.

3. The results of research on computer-based school exams designed by researchers can only be used on a local server (only accessible at SMKN 3 Malang), but the "raw" data can be used elsewhere.

5. Conclusion

This research provides valuable insights into students' perceptions and the impact of implementing research and development undertaken. These findings are very valuable for a research and development since it can be understood that the research carried out has these benefits for the intended target. The research findings support the conclusion of [10] that when a teacher uses information on students' culture, life experiences, interests, and preferred learning strategies, the teacher will make something relevant to their students. Teachers can also help students move from what they know to what they need to get something meaningful for themselves. The data analysis also shows that the use of East Javanese culture and language can support authentic student-centered pedagogy. Further research is needed, namely on explaining how best to articulate the benefits of using East Javanese culture and language to develop student professional skills in this developing cultural area.

It is interesting to note that students appreciate the innovations made by researchers, namely to bring what is in their environment into the exam questions. Although the generalizability of this study is limited, the findings identify several benefits of using East Javanese culture and language to initiate a culturally responsive school climate.

Further research will aim to explore ways to maximize the use of East Javanese culture and language in the curriculum section in schools and be used in exam questions. There is also the potential to use the model used in this study to support learning in disciplines outside of language education. It will become a new tool in helping educators exploit the full potential of the culture around students as a culture-responsive learning practice.

Acknowledgement

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