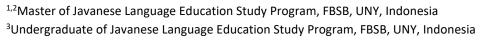
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PISA-Based Assessment Instrument In Javanese Language Learning Grade VIII







ABSTRACT: This study aims to develop and evaluate PISA based assessment tools for Javanese language learning grade VIII. This research used the research and development (RD) method with the ADDIE model including the stages of analysis, design, development, validation and testing, and media evaluation. PISA-based standard media for evaluating Javanese language learning were developed using the WordPress application and evaluated by a material expert, a media expert, and teachers of Javanese language. The data were collected using questionnaires and analyzed descriptively. The results of the study show that the quality of the assessment media was highly rated by material experts (87.90%), media experts (100%) and Javanese language teachers (100%). Students' opinions on the Javanese language assessment tool were also very positive (85.76%). Overall, the average rating of media quality was 93.42% categorized as Very Good. This research makes a significant contribution to the development of PISA-based evaluation media for Javanese language learning.

KEYWORDS: PISA, Assessment Instruments, Javanese, Learning, ADDIE

I. INTRODUCTION

Learning is one of the activities carried out by teachers and students in direct interaction (Febrita Ulfah, 2019). Learning also means the process of communicating materials from the source to the receiver using certain media (Sanaky, 2009). In the communication process, the transferred message must be able to be absorbed and lived by the person receiving the message. The communication process in learning has certain components, including the teacher as the communicator or messenger, the student as the communicator or receiver of the message, the learning material as the message, the learning media as the means of conveying the message, and other factors in the form of feedback in learning.

Learning and learning assessment are closely linked in the educational process. This is because the evaluation is one of the processes to assess the problem. Evaluation is also used to gain feedback to improve and optimize the learning process. Evaluation is usually qualitative (Ningsih, 2012). Evaluation also means the systematic assessment of the usefulness of an object (Stufflebeam Shinkfield, 1985). Rules are usually used in the evaluation process, which are taken into account in making decisions. The purpose of evaluation is to find out the extent of the impact of a program by comparing the results with the objectives set. In addition, evaluation also aims to determine the effectiveness of programs that have or have not been achieved as planned. In evaluation, there are steps of conducting tests that need to be fulfilled. The test can be considered a good measurement tool if it fulfils test requirements, including validity, reliability, objectiveness, practicality, and cost-effectiveness (Rapono, Safrial, & Wijaya, 2019).

PISA (Program for International Student Assessment) is one of the products of the OECD (Organization for Economic Cooperation and Development). PISA is an international assessment program that aims at evaluating the education of participating countries. PISA is one of the tests used to measure students' reading, writing, and math skills. Reading literacy is one of the aspects assessed to determine the quality of education. Several studies have shown that the skills of students in Indonesia are still low (OECD, 2016; Putrawangsa & Hasanah, 2018; Putrawangsa & Syawahid, 2018). This is because students in Indonesia are not able to recognize the main idea of reading.

Based on the latest PISA results, on December 5, 2023, the skills of students in Indonesia dropped. The local government of Yogyakarta is trying to improve the PISA result. One of the ways is to implement the ASPD (Regional Education Assessment) program. The program is implemented to increase students' enthusiasm for learning. This can be seen by the fact that the PISA

results in DIY is at the first rank in Indonesia. Therefore, the government has conducted OECD research to improve the quality of education in Indonesia. One of them is by developing the curriculum, namely from Curriculum 2013 to Kurikulum Merdeka (the Emancipated Curriculum). Local content lessons are mandatory at school for grade IV SD/MI/SDLB, SMP/MTs/SMPLB, SMA/MA/MALB, and SMK. Regarding the existence of PISA, of course, Javanese language learning must also contain the assessment instruments of PISA-type question. This is because the Emancipated Curriculum has literacy content. Therefore, the emancipated curriculum is used in all schools in the Yogyakarta Special Region.

Literacy and language skills are closely related and complement each other. Literacy programs can improve language skills and vice versa. Language skills are divided into four areas, namely reading, writing, speaking, and listening (Setyowati, Hartono, Sriyanto, 2014). Based on language proficiency in Javanese language learning, it can be used as a means to improve PISA scores. When creating PISA questions, there are of course rules that need to be mastered by teachers, as not many teachers have the skills to create PISA questions. Materials for reading, writing, and arithmetic in Javanese have been included in the curriculum, especially in secondary schools. The development of media for learning Javanese is widespread, but there is no learning media that focuses on practicing with PISA question types.

Media is a tool to transmit messages or information from sources to recipients (Hidayatullah Haryadi, 2018). Meanwhile, learning media is a tool or means to convey materials from sources or teachers to recipients or students in the learning process (Latuheru, 1988). In addition, learning media can also be in the form of books, tape recorders, videotapes, movies, slides, photographs, pictures, televisions, and computers that contain learning materials (Azhari, 2015). The types of learning media are categorised into three, namely audio media, visual, and audio-visual (Aghni, 2018). Learning media undoubtedly has benefits for students. They can attract students' attention, make the material more interesting, bring students' understanding to the same level when mastering the material, make it easier for students to understand the material, students can learn independently, and students can more easily translate abstract meanings into concrete ones (Latuheri, 1988).

The rapid development of information technology has enabled the integration of computers into various aspects of learning, one of which is their use in learning assessment. Computers are one of the outcomes of modern technology used in learning. Even though it is a modern technology, computers also have disadvantages instead of its advantages. Computer media can also be used by students independently in the assessment process. Computers as means of practicing questions are divided into two types, namely Computer Assisted Instruction (CAI) and Computer Managed Instruction (CMI). The CAI evaluation process allows students to interact directly using a computer in which learning materials and assessments are stored. The CMI evaluation process, on the other hand, is used as a means for teachers to organize evaluations related to the evaluation management system (Latuheru, 1988).

WordPress is not only used to create websites but can also be used as a medium for learning assessment. WordPress can be used as an application to design writing, audio, video, and animation in the form of blogs. The WordPress application has many versions that are always updated with features. In addition, WordPress also has advantages over other programs. The one of advantages of WordPress is its ability to produce small-sized files even though the program results are in the form of animation. This study used WordPress 5.0 that has been widely used for evaluation and learning media. The learning media made using this program can attract students' attention because it contains animation. The media made in this study is expected to be applied as means of evaluating Javanese language learning based on PISA for grade VIII of junior high school.

Therefore, Javanese language teachers need to create media for Javanese language learning instrument in the form of multimedia that can automatically determine student scores, especially for the grade VIII students of junior high school. Javanese language learning instrument media is made using the ADDIE (Analysis, Design, Development, Implementation, Evaluation) development procedure connected to the WordPress application. This study aims to explain how to develop PISA-based standard evaluation instrument media.

II. RESEARCH METHODS

This research is a type of Research and Development (RD) research using the ADDIE method, a development model from Branch. This RD research aims to produce products that can be tested empirically (Gustiani, 2019). The research steps carried out in the ADDIE method are the analysis stage, the instrument design stage, the instrument-making stage, the validation and trial stage, and the evaluation stage (Yulia, Riadi, Nursanni, 2023). The data sources of this research are validators, and Javanese language teachers as well as students of SMP Negeri 4 Wates. PISA-based assessment instruments were used for Javanese language learning in grade VIII and were validated by a material expert (a lecturer) and a media expert (a lecturer). The data were collected using questionnaires. The data were analysed using descriptive analysis based on the evaluation of the instrument and students' opinions. The instruments were validated using external and internal validity (Merrydian et al, 2024). The reliability of the instrument was tested using the triangulation method of data sources.

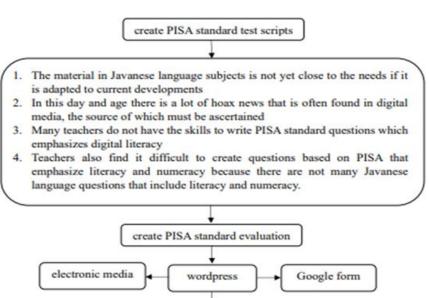


Figure 1. Cognitive process dimension

Javanese language evaluation media based on PISA

validity test of media experts and material experts

feasibility test for Javanese language teachers and students

III. RESULTS AND DISCUSSION

PISA-based standard evaluation media were developed using the RD research method. The creation of this evaluation media consists of five stages, namely analysis, media design, media development, media validation and trials, and media evaluation. These stages are also called the ADDIE (Analysis, Design, Development, Implementation, Evaluation) development procedure. The discussion of development stages of PISA-based standard evaluation instrument for Javanese language learning is below.

A. Analysis

The analysis stage is the first step that must be done before making a product. In this study, the analysis stage is divided into three, namely curriculum analysis, technology analysis, and needs analysis of grade VIII students of SMPN 4 Wates which is carried out through observation. Curriculum analysis is carried out by looking at the curriculum used in Javanese language learning at the school so that the media to be made is in accordance with the curriculum. Currently, SMPN 4 Wates uses the Emancipated Curriculum which is supported by literacy and numeracy competencies as contained in the PISA program.

Working on PISA questions requires the ability to analyse its questions, because PISA questions cannot be solved in a single step. In addition, the PISA questions also contain reading material relating to everyday problems and technological progress. The ability to deal with PISA standard questions can also influence the success of the curriculum used in schools. Based on the observation results, SMPN 4 Wates students need examples of questions that use PISA standards, as these questions may not capture students' attention and seem old-fashioned. In addition to analysing the curriculum, a technology analysis is also conducted to identify the software or computer software that can be used to create media. Therefore, in this study, the PISA-based media assessment tool takes the form of a website created using the WordPress application and linked to Google Forms. The media was created to draw students' attention to learning the Javanese language.

B. Media Design

It is the second step in ADDIE's development procedure aiming to determine the content of the learning media. The product design is made through an interactive website using materials and questions as practice materials to assess students' skills. During the evaluation process, the teacher continues to act as a controller and informant in the classroom. In other words, the evaluation process must be interactive and educational so that students are enthusiastic and happy in learning.

The design of the PISA-based Javanese language learning evaluation instrument was made based on the things found in the analysis stage. There are two things that are done in the stage of creating a media design, namely making a flowchart and storyboard. Flowcharts are used as guidelines in designing learning media that contain the form and content of learning.

C. Media Development

It is the third stage in the process of making PISA-based standard Javanese language learning evaluation instruments. The flowchart that discusses the content of learning is processed into Javanese language material for grade VIII. Flowchart and complete materials are used as scripts for Javanese language learning evaluation instruments. The instrument contains a registration menu as a form of home, *pituduh* (the guidance) as the manual, the Javanese PISA test as a form of evaluation questions, *pangrakit* as information for media makers, and answer keys. The manuscript of the Javanese language learning evaluation instrument based on the PISA standard was made using the WordPress application and equipped with a google form.

D. Media Validation and Trials

The validation and trial stages can be carried out after the evaluation instrument media is created. The validation process requires expert judgement from the material expert and the media expert. The validation process is carried out in order to get suggestions and evaluations of media products that have been made. If the developed media is feasible, a trial process will be carried out.

1. The Validation of Media and Materials

The validation from a material expert is carried out to obtain suggestions and evaluations of the materials in the learning evaluation media. The validation process is carried out by providing an evaluation questionnaire to a materials expert that contain several aspects of assessment. The materials expert was Mrs. Dr. Nurhidayati, S.Pd., M.Hum. The validation carried out by the materials expert was the material feasibility test which would later be tested on SMPN 4 Wates students. In addition, validation by a subject-matter expert includes several assessment indicators described in the table below.

No.	Indicator		Stage I		Stage II	
	Competency	PISA Characteristics	Item Category		Item	Category
1.	Reading Competency	The ability to retell the information	3	Good	4	Very good
		Interpretation development	3	Good	4	Very good
2.	Critical Thinking	Reflecting and evaluating text	2	Less than Satisfactory	3	Good
3.	Linguistic Aspects Used	Using complex sentences in the form of tables	2	Less than Satisfactory	4	Very good
		Using complex sentences in the form of diagrams	3	Good	3	Good
		Using complex sentences in the form of graphs	4	Very good	4	Very good
4.	Assessment Preparation Process by Seeking Information	Accessing and retrieving information from the text	3	Good	4	Very good
		Searching for and selecting relevant text	3	Good	3	Good
5.	The Process of Preparing an Assessment with Understanding	Understanding the literal meaning of a sentence or short passages	3	Good	3	Good
		Integrating and generating conclusions	3	Good	4	Very good
		Integrating and generating	3	Good	4	Very good

Table 1. Results of the Material Validation by an Expert Lecturer

No.	Indicator		Stage I		Stage II	
	Competency	PISA Characteristics	Item	Category	Item	Category
		conclusions from many sources				
6.	The Process of Preparing Assessments by Evaluating and Describing	Evaluating whether the information in the text is valid	2	Less than Satisfactory	3	Good
		Reflecting on the content of the text by evaluating and determining how the author expresses their purpose and/or point of view	3	Good	4	Very good
		Finding and overcoming conflicts	2	Less than Satisfactory	3	Good
7.	The characteristic of	Single	4	Very good	4	Very good
	text format	Many sources	3	Good	3	Good
8.	Characteristics of Text	Static	4	Very good	4	Very good
	Format - Settings and Navigation	Dynamic	2	Less than Satisfactory	3	Good
9.	The characteristic of	Continue	3	Good	3	Good
	text format	Non-continue	3	Good	3	Good
		Mixed-format	2	Less than Satisfactory	3	Good
10.	The characteristic of	Description	-	-	3	Good
	text format – Text types	Narrative	3	Good	4	Very good
		Exposition	3	Good	4	Very good
		Argumentation	4	Very good	4	Very good
		Instruction	3	Good	3	Good
		Transactional	3	Good	3	Good
11.	The characteristic of	Multiple choice	4	Very good	4	Very good
	answer formats	Complex multiple choice	4	Very good	4	Very good
		Closed Essay	3	Good	4	Very good
		Open Essay	3	Good	3	Good
Total	Grade		90		109	
The percentages of Items			72,58 %	Good	87,90%	Very good

Based on the table above, it can be seen that there are eleven Competencies for PISA questions, namely reading competency, critical thinking, linguistic aspects used, assessment preparation process by seeking information, the process of preparing an assessment with understanding, the process of preparing assessments by evaluating and describing, the characteristic of text format, characteristics of text format - settings and navigation, the characteristic of text format, the characteristic of text format – text types, and the characteristic of answer formats (OECD, 2002; OECD, 2010; OECD, 2016; OECD, 2017; OECD, 2019a; OECD,

2019b; OECD, 2019c; OECD, 2019d; OECD, 2019e; OECD, 2021; OECD, 2023). Each Competency has its own PISA Characteristic. The assessment of material expert lecturers in the first stage received a percentage of 72.58% which was included in the good category. Even though it is included in the Good Category, the questions must be revised. According to the material expert lecturer, there are several things that must be revised, including changing question numbers that do not match the PISA Characteristic, combining question numbers that have the same PISA Characteristic, adding questions that are in accordance with the PISA Characteristic, correcting spelling in writing words, adjusting answers to multiple-choice questions that are not equivalent, and adjusting the use of language. After being revised, the assessment of the materials expert in the second stage gave score of 87.90% which is categorized as Very Good. The lecturer who was the subject-matter expert has also given approval that the PISA questions are suitable to be used in the media.

The validation from the media expert aims to get advice and evaluation regarding the quality of the media. The media expert was provided with an evaluation questionnaire containing graded aspects. Suggestions from the media expert are then used to improve the quality of the media. The lecturer who became the validator was Dr. Doni Dwi Hartanto, S.Pd., M.Pd. Validation carried out by the media expert is carried out until the media is considered well-meaning of being tested on SMPN 4 Wates students. Validation by the media expert is divided into two, namely the display aspect and the programming aspect. Validation related to the display aspect consists of 10 indicators, while validation related to the programming aspect consists of 9 indicators.

Table 2. The Results of the Validation of a Media Expert (a Lecturer) related to the Display Aspect

No	Statement	Stage I	Stage I		Stage II	
		Grade	Category	Grade	Category	
1.	The operation ease of the menu	3	Good	4	Very good	
2.	The readability of writing	4	Very good	4	Very good	
3.	The choice and composition of colours	4	Very good	4	Very good	
4.	The image presentation	4	Very good	4	Very good	
5.	The visual design and content layout	3	Good	4	Very good	
Total Grade		18	Manuarad	20		
The Grade Percentage		90%	 Very good 	100%	 Very good 	

Based on the table above, it can be seen that the validation from the media expert related to the display aspect got a 90% percentage considered as Very Good. Even though this percentage is included in the Very Good Category, there were advices from the media expert to improve the quality of media displays. According to the media lecturer, two things need to be improved in the appearance of the media. First, the media needs to be given a menu related to instructions for use to make it easier for students to use the *pisajawa* media. Second, the display of the media must be consistent so that the display of inappropriate questions needs to be improved. After being revised, the assessment of media expert lecturers in the second stage obtained a percentage of 100% which is categorized as Very Good.

Table 3. Results of Validation of a Media Expert (a lecturer) related to Programming Aspects

No	Statement	Stage I		Stage II	
		Grade	Category	Grade	Category
1.	Ease of menu usage	4	Very good	4	Very good
2.	Display support in the media	3	Good	4	Very good
3.	The accessibility of the media	4	Good	4	Very good
4.	The media interactiveness	4	Good	4	Very good

Total Grade	13	16
The percentage of the grade	Very good 81,25%	100% Very good

Based on the table above, it can be seen that the validation from lecturers who are media experts related to the programming aspect received 81.25% which is included in the Very good Category. Even though this percentage is included in the category of feasible use, media expert lecturers still provide suggestions to improve the quality of media programming. According to the media expert lecturer, there are three things that need to be improved in media programming. First, the display support power indicator needs to be improved by adding a lock menu in the media. Second, the media indicator for accessibility needs to be improved by adding additional menus or buttons. Third, media indicators can be used interactively and can still be improved by adding information to the PISA test menu and menu keys. After being revised, the assessment of the media expert in the second stage scored a percentage of 100% which is categorized as Very Good. Therefore, the Javanese language learning evaluation media is considered very feasible from the aspect of display and programming to be tested on SMPN 4 Wates students.

2. Media Trials

Trying out the assessment media is an important process to ensure that the created evaluation tools are valid, reliable, and effective in measuring what is supposed to be measured. The main purpose of this trial is to identify shortcomings or weaknesses in the assessment medium so that it can be improved before it is widely used. This media trial was carried out by teachers and students of SMPN 4 Wates. After conducting a trial, teachers and students of SMPN 4 Wates gave an evaluation of the media made. Teachers provided assessments on the media in terms of the quality of media from the aspect of concept and competency as well as the aspect of media display. The media quality assessment was carried out by Ibu Bethy Mahara Setyawati, S.Pd. She is one of the Javanese language teachers at SMPN 4 Wates. Teachers can first-hand see the use of media during the learning process. Teachers' assessment of the quality of the media can be seen in the table below.

Statement	Grade	Category	
The conformity between the developed material and PISA standard literacy and numeracy competency	4	Very good	
The language clearness and ease of understanding	4	Very good	
Variation of difficulty levels (easy, medium, hard) of the questions	4	Very good	
The accordance of materials with the Emancipated Curriculum	4	Very good	
The Media relevance in determining students' Javanese language skills based on PISA standards	4	Very good	
Total Grade		Manuarad	
The percentage of grade		— very good	
3	Curriculum The Media relevance in determining students' Javanese language skills based on PISA standards rade	Curriculum The Media relevance in determining students' Javanese 4 language skills based on PISA standards rade 20	Curriculum The Media relevance in determining students' Javanese 4 Very good language skills based on PISA standards 20 very good Very good

Table 4. Results of media trials from the concept and competency aspects by the teacher

Based on the table above, it can be seen that the percentage of media quality in the concept and competency aspects by Javanese language teachers was 100% which is categorized as Very Good. The indicators carried out by teachers are the conformity between the developed material and PISA standard literacy and numeracy competency, the language clearness and ease of understanding, variation of difficulty levels (easy, medium, hard) of the questions, the accordance of materials with the Emancipated Curriculum, and the media relevance in determining students' Javanese language skills based on PISA standards.

No.	Statement	Grade	Category
1.	The ease of media usage	4	Very good
2.	The display of the media	4	Very good
3.	The design and images in the media	4	Very good
4.	The visual design and layout of the content	4	Very good
5.	The text readability	4	Very good
Total	Grade	20	Vorenand
The p	ercentage of grade	100%	Very good

Table 5. Results of media trials from the aspect of display by the teacher

Based on the table above, teachers of Javanese language perceived that assessment media quality in the aspect of display is categorized as Very Good. The indicators carried out by the teacher are the ease of media usage, the display of the media, the design and images in the media, the visual design and layout of the content, and the text readability. In addition to conducting trials and evaluations with teachers, students were also involved in evaluating the media. Students provided suggestions through questionnaires in the form of Google Forms. The media was evaluated by students from two aspects, namely the concept and competency aspects and the media display aspect which can be seen in the table below.

No.	Statement	Dominant Grade	Category
1.	Questions containing numeracy and literacy	51,5%	Very good
2.	Questions containing analysis	97%	Yes
3.	The presence of easy questions	75,8%	Yes
4.	The presence of medium difficulty level questions	97%	Yes
5.	The presence of difficult/hard questions	69,7%	Yes

Table 6. Results of media trials from the aspect of concept and competency by students

Table 7. Results of the media trial from the aspect of display by students

No.	Statement	Dominant Grade	Category
1.	The ease of media usage	51,5%	Very good
2.	The display of the menu in the media	57,6%	Very good
3.	The design and images in the media	54,5%	Very good
4.	The visual design and content layout	60,6%	Very good
5.	The text readability	48,5%	Very good

Based on the table on the students' evaluations, it can be seen that the evaluation media are already of good quality both in terms of concept and skills and in terms of appearance. In other words, the evaluation media are practicable. This can be seen from the results of the questionnaire determining that the evaluation medium receives the dominant score of Very Good. In addition, the questions are in line with the learning objectives and are able to differentiate between students with high and low ability as shown by the results of the study. The presentation of this assessment media is very interesting and interactive, making students feel motivated to complete the questions. The use of pictures and animations makes the assessment process more enjoyable.

E. Media Evaluation

The evaluation stage in the ADDIE model is very important to ensure that the media developed is effective and of high quality. By conducting systematic and continuous evaluation, the media can be improved by its quality. This is related to feedback from lecturers, teachers, and students given at the validation and trial stages. The results of the feedback were realized so that the quality increased and was ready to be used widely. Below is the image of PISA-based standard Javanese language learning evaluation media using the WordPress application.



Menanpa ingkang dipun wastani PISA?

PISA (Program for International Student Assessment) inggih menika tes kangge ngukur kaprigelan literasi saha numerasi para siswa saking nagari anggotanipun. PISA menika salah setunggaling product ingkang dipunasilaken OECD (The Organization for Economic Co-operation and Development) inggih menika setunngal organisasi Internasional ingkang gadhah ancas ngluwari pambengan-pambengan ingkang arupi isu-isu global kadosta kirangipun literasi saha numerasi, kemiskinan, saha sanes-sanesipun. Sedaya kupiya kala wau amrih mujudaken misi supados 28 negari anggota OECD saged dados nagari ingkang makmur.

Menapa wigatining PISA kagem pamulangan Basa Jawi?

Gayut kaliyan PISA temtu kemawon ing salebeting pamulangan basa Jawi, para siswa kedah dipungladhi supados gadhah kompetensi literasi saha numerasi ingkang sae. Salah satunggaling kupiya inggih menika ngginakaken instrumen-instrumen soal tipe PISA. Instrumen soal tipe PISA menika sampun ngewrat ALN utawi Analisis Literasi Numerasi. Kanthi gladhen ngginakaken soal tipe PISA menika, ing pangajab para siswa saged kulina damel analisis literasi numerasi satemah asiling skor PISA saged mindhak. Instrumen soal tipe PISA menika ugi minangka panyengkung Kurikulum Merdeka ingkang ugi nengenaken bab literasi saha numerasi. Menapa malih kurikulum merdeka sampun lumampah ing Daerah Istimewa Yogyakarta.

Figure 2. Media evaluation on using the WordPress application

IV. CONCLUSION

This RD research has yielded a product in the form of an assessment medium for Javanese language learning with PISA standard questions. This evaluation media was created with the WordPress application and using Google forms for students to complete the PISA standard questions on Javanese language. The process of creating evaluation media based on the ADDIE procedure is done in several steps to create evaluation media that are suitable for use. Validation and testing by instructors who know the material, instructors who know the media, teachers and students play an important role in determining the feasibility of the media. Various suggestions and improvements during the validation and testing process help to improve the quality of the media. Finally, after validation and testing, these evaluation media can be included in the Very Good category. In addition, the PISA-based evaluation media for Javanese language learning using WordPress is one of the learning innovations relevant to the times and technology. This media allows students to become more proficient in PISA-standardized Javanese item questions.

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