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Development of a Cognitive Diagnostic Assessment Module for Social Science Subjects for Junior High Schools

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This study aims to explain the process of developing a periodic diagnostic assessment instrument for social studies subjects at junior high school and precisely to determine the effectiveness of using the product. Periodic diagnostic assessments lead to early diagnosis of the condition of students in a particular learning topic, intending to create a learning process based on the needs and abilities of each student (teaching at the right level). The method used is Research and Development (R&D) from Borg&Gall which consists of 1) needs analysis, (2) product planning, (3) product development, (4) expert validation, (5) individual test, (6) revision, (7) small group trial, (8) revision and (9) final product and report. The data obtained were analyzed using percentages (%), and the basis for decision-making for the product revision process was obtained from the results of the questionnaire analysis of the validation experts. The diagnostic assessment instrument was developed in the form of a module. The validation results of material, design, and language experts showed 87.18%, 87.50%, and 89.33%. The developed module is valid and can be tested in the field. The results of the limited trial showed a percentage of 83.33% (from teachers) and 92.00% (from students). Large-scale test results show an average rate of 90% (from teachers) and 82.01% (from students). The results of product trials at the individual trial and field trial stages show that the module is very valid so that the product can be used. The responses from students and teachers indicate that using the diagnostic assessment module can support the effectiveness of social studies learning.

Keywords: Development, Modules, Diagnostic Assessment, Cognitive

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1. Introduction

Indonesia faced the Covid-19 pandemic from 2019 to 2021. The pandemic at that time had an impact on various aspects of life in Indonesia, including education, economics, social culture, and others. The educational process carried out in the form of learning in schools experienced various dynamics during the pandemic. The dynamics of the learning process cannot be separated from the development conditions of the Covid-19 pandemic. At the beginning of the Covid-19 pandemic, learning in schools was carried out online according to each school's policy. Around March 2000, the government issued a four-ministerial policy containing emergency learning guidelines during the Covid-19 pandemic. The learning carried out is still oriented towards online learning. Developments in the implementation of learning during the Covid-19 pandemic have recently begun to lead to learning with a flexible curriculum system that takes into account students' learning needs, growth and development and psychosocial conditions without ignoring health principles.

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The government issued policies related to the use of curriculum in schools in two forms, namely the simplified 2013 curriculum and the emergency curriculum (under special conditions). The Ministry of Education and Culture has prepared the emergency curriculum to simplify the competencies to be achieved. Teaching materials in modules and videos containing material were also released (Gusty, 2020). This is a form of government initiation in taking solutions related to the learning process during the pandemic, with the different conditions of Covid-19 cases in each region. This policy also responds to various community complaints regarding learning problems during the pandemic. Instruments in the form of learning modules for teachers, parents, and students have been released but are limited to the primary level. In addition, it is recommended that diagnostic assessments are carried out regularly, especially for the implementation of distance learning. This recommendation aims to determine the condition of students emotionally, intellectually, and psychosocially due to distance learning.

Cognitive diagnostic assessments help identify an individual's strengths and weaknesses in various cognitive aspects, such as memory, attention, and problem solving. With this information, educators and health professionals can adapt their approaches to meet each individual's specific needs. With a better understanding of an individual's cognitive profile, interventions or teaching strategies can be designed more appropriately and effectively. For example, students with memory difficulties may require different learning techniques compared to students who have attention difficulties. In an educational context, cognitive assessment allows the development of curricula and learning programs that are more appropriate to students' cognitive abilities. This can help improve learning outcomes and minimize educational gaps.

Periodic diagnostic assessments lead to early diagnosis of the condition of students in a particular learning topic, intending to create a learning process based on the needs and abilities of each student (teaching at the right level). This assessment uses the principle of routine, where the teacher can provide a periodical at the beginning of each change of topic being studied. The government recommends periodic diagnostic assessments directed at two forms of diagnostic assessment: cognitive and non-cognitive. The stages in this assessment include preparation, implementation, diagnosis, and follow-up. Through the Ministry of Education and Culture, the government has issued a 'Diagnostic Assessment Pocket Book,' which contains explanations that can guide teachers in carrying out this assessment process. In this pocketbook, examples of forms of diagnostic assessment have also been given, but they are only limited to the elementary school level. This pocketbook has no detailed instruments for periodic diagnostic assessments for each subject.

According to Bloom (in Yusuf, 2017), one of the assessment functions is a diagnostic function. The diagnostic function can be used for diagnostic assessments or target assessments more focused on students. Self-diagnosis assessments are felt necessary for other levels because the impact of learning during the pandemic is also experienced by students at every level of education. The diagnostic function can be performed correctly when the instruments used in the assessment are sufficiently qualified, where the teacher can later find out the student's weaknesses (Ismail, 2019). According to Ramadhani, et all (2020), that the assessment It is in accordance with the expected curriculum..

Based on preliminary data mining through observations and interviews with representatives of subject teachers in three junior high schools in Jember Regency (MTs. Negeri 01 Jember, SMPN 03 Arjasa Jember and SMPN 01 Nuris Jember) on May 5 and 06, 2022, an illustration is obtained that the form The implementation of the assessment that is usually carried out for is the assessment of learning outcomes in the form of daily tests, quizzes, midterm exams, and school final exams. Regarding diagnostic assessments, teachers know about the form of the assessment. However, some know there is a government recommendation to assess during and after the pandemic with adaptive conditions to online to offline lectures and vice versa. The teacher explained that there were no available or existing instruments to implement the assessment. Some of these essential things became a reference for the authors to research to develop a periodic diagnostic assessment instrument for the emergency curriculum (under special conditions) for social studies subjects at Junior High Schools. The development of a cognitive diagnostic assessment module can help detect cognitive problems early, such as learning disorders or other developmental problems. Early detection allows for quicker and more effective intervention, which can reduce the long-term impact of the problem.

Literature review

Relevant Previous Studies

Several previous research studies were used to compare this research with several existing relevant studies . The first previous research study was research entitled 'Relationship Between Student's Diagnostic Assessment and Achievement in a Pre-University Mathematics Course ' by George Tan Geok Shim et al (2017) in the Journal of Education and Learning Vol. 6. This study discusses the importance of using diagnostic tests for prospective students regarding their mathematical abilities. The research was conducted by looking at the relationship between initial abilities obtained through diagnostic tests and the final exam results of students entering college. A sample of

250 prospective students who will take the college entrance test. The instruments used are questionnaires, diagnostic test sheets and final mathematics tests. A strong positive correlation between diagnostic tests of mathematical ability and the mathematics learning outcomes of pre-university students is shown in the research results.

The second study is research entitled ' Diagnostic Assessment for Improving Teaching Practice' by Yuan Sun and Masayuki Suzuki in the International Journal of Information and Education Technology ', Vol. 3, no. 6. In this research, it is explained that the tendency of reporting test scores carried out by teachers in Japan so far has only been to focus on total test scores which do not provide diagnostic information, so that teachers do not obtain information about students' strengths and weaknesses. Cognitive diagnostic assessments (CDA) are designed to measure students' specific knowledge structures and processing skills. This study applied CDA to 144 sixth grade elementary school students in Japan. Researchers show how CDA provides detailed information about students' strengths and weaknesses, as well as discussing the application of CDA to improve existing teaching practices which ultimately provides feedback to teachers .

The third research is research entitled ' The Procedure Used on Diagnostic Evaluation Process ' 2019 in the International Journal of Health & Medical Sciences , 3(1), 1-10. This research conducted an exploratory study to verify how adequate and relevant teachers carry out assessments that are not only academic but also comprehensive. Data was obtained through a survey, where the results showed that teachers had limitations regarding the conception of diagnostic evaluation because they considered the content was not a space for continuous learning, teachers also did not meet different learning styles to determine what academic improvement needs were applied to each student. Although the results of diagnostic evaluations should be important to consider in making decisions about improving procedures inside and outside the classroom.

The fourth research is research on 'Development of a Diagnostic Instrument for Learning Difficulties in Chemistry Learning in High School' by Sri Yamtinah and Budiyono. The development of diagnostic instruments related to difficulties in studying Stoichiometry is discussed in this research. Apart from that, it also discusses determining the characteristics of the instrument . Next, a diagnostic profile is created for informative reports related to student development . The Borg & Gall development model was used in the development of this research product . Three question packages were used to detect students' learning difficulties in Class X Stoichiometry material; Package A, B and C question items accompanied by construct validity and student profiles in the form of diagnostic reports regarding attributes that students have mastered and have not mastered are the results described in this research.

Based on several previous research studies , the research has several similarities and differences. The similarities that appear between previous research and the research that will be researched by the author are found in the discussion of diagnostic assessments. Differences that can be studied include; In previous studies, the correlation between diagnostic assessments and learning outcomes was studied, the use of diagnostic assessments to improve teacher abilities and the development of diagnostic assessments for Mathematics and Chemistry subjects. This research seeks to develop a product in the form of a diagnostic assessment instrument for social studies subjects under the implementation of the Emergency Curriculum (under special conditions) .

Relevant Concepts or Theories

1. Diagnostic Assessment

Assessment is a systematic activity to collect and analyze information to convey or display and ensure improvements in student learning outcomes that are in line with the expected learning objectives (Bundu, 2017: 107). Assessment is the application of numbers in the form of procedures or symbols regarding the attributes of an activity or object or events based on certain rules. (Yusuf , 2017:10). The assessment is indeed in accordance with the competencies expected by the curriculum (Ramadhani, et al, 2020) .

Both education and learning contain assessment classifications, namely the first is a placement assessment and the second in the form of a diagnostic assessment (Yusuf, 2017:18) . Minister of Education and Culture Decree Number 719/P/2020 means that diagnostic assessments are implemented in a specific way in order to identify the competencies, weaknesses and strengths of students. It is hoped that learning that is in line with the competencies and conditions of students can be formed.

One of the assessment functions according to Bl oom (in Yusuf , 2017) is a diagnostic function. The diagnostic function can be used for diagnostic assessments or targeted assessments that are more focused on students. One of the objectives of this function is knowing students' strengths, weaknesses and special talents (Yusuf, 2017:27). The diagnostic function can be carried out well when the instruments used in the assessment meet the requirements, so that later the teacher can really find out the students' weaknesses (Ismail, 2019:36) .

2. Development of Assessment Instruments

According to Sani in Mumtahanah (2018) assessment is an effort to collect and process data or information that is valid and reliable in order to make considerations for policy making for an educational program. Assessment in learning must have certain procedures/steps. According to Uno and Satria, there are several work sequences that must be carried out, namely (a) describing basic competencies into indicators for achieving learning outcomes; (b) determine the criteria for completeness of each indicator; (c) mapping competency standards, basic competencies, indicators, completion criteria and aspects contained in the report card; (d) mapping competency standards, basic competencies, indicators, completion criteria, assessment aspects and assessment techniques; (e) determine assessment techniques by considering indicator characteristics.

In relation to diagnostic assessments, there are several things that are done as a step in developing this assessment, namely: 1) Preparing non-cognitive assessments, the aim of which is to determine students' psychological and social emotional well-being, students' activities while studying at home, and the conditions of students' families; 2) Preparing cognitive assessments, the aim of which is to identify student competency achievements, adapt classroom learning to average student competency, provide remedial classes or additional lessons to students whose scores are below average ; 3) Follow up and evaluation.

2. Method

The research method used in this study is research and development (R&D) with the Borg and Gall development model modified and adapted. This research discusses the process and steps for developing periodic diagnostic assessment instruments for SMP/MTs social studies subjects. Discussion regarding the product development process will produce some data, namely as follows.

1. Implementation of needs analysis related to learning during and after the Covid-19 pandemic and the assessment process for social studies subjects in SMP/MTs. in the Jember Regency Area.
2. Product planning, where at this stage the data obtained is in the form of product prototype planning based on the results of the needs analysis.
3. Product development, where at this stage data is obtained and the process of making the product being developed is discussed.
4. Validation by experts, at this stage the data is discussed in the form of validation questionnaire analysis results from experts so that conclusions are obtained regarding whether the product is suitable or not in the form of a periodic diagnostic assessment instrument that has been developed as well as several revisions for product improvement. The results of the validation process from experts were discussed in a Focus Group Discussion (FGD) forum.
5. Individual testing, at this stage the data is discussed in the form of validation questionnaire analysis results by a social studies teacher at SMP/MTs, so that conclusions will be obtained regarding whether the product that has been developed is feasible or not as well as several revisions for product improvement.
6. Revision, at this stage, product improvements are discussed which are designed based on the results of expert validation and also the results of individual tests.
7. Small group test, discussing data in the form of validation questionnaire analysis results by several social studies teachers at SMP/MTs. in the Jember Regency area so that conclusions will be obtained regarding whether or not the products that have been revised in the previous stage are appropriate.
8. Revisions at this stage discuss further product improvements based on the results of small group tests.
9. Final product and report, in this section we will discuss the results of the final product that has been developed and tested as well as overall reporting related to the process of developing periodic diagnostic assessment instruments for SMP/MTs social studies subjects. in Jember Regency.

The final product of this research is in the form of hard copy and softcopy of periodic diagnostic assessment instruments for social studies subjects for Junior High Schools. Development data was analyzed by transcribing interviews with user respondents, curriculum analysis, and product preparation. The instruments in this study were questionnaires and interview transcripts. The data obtained were analyzed using percentages (%), and the basis for decision-making for the product revision process was obtained from the results of a questionnaire analysis of validation experts, including learning assessment experts, linguists, and potential users with reference criteria according to Akbar and Sriwijana (2010).

$$\boldsymbol{V = \frac{\Sigma TSEV}{\Sigma S - max} x\ 100\%}$$

Information:
V = Validity
TSEV = Total number of validator empirical scores
S-max = Total expected maximum score
100% = Constant

After the percentage results are known, the next step is to interpret the percentage results based on predetermined criteria. These criteria can be seen in Table 1 below.

Table 1
Criteria for Product Validity Level

Criteria	Qualification	Information
75.01% - 100.00 %	Valid/ Very valid	No revision

50.01% - 75.01%	Quite valid	Minor revision
25.01% - 50.01%	Invalid	Big revision
0.00% - 25.01%	Very invalid	Big Revision

Source : Akbar and Sriwiyana (2011).

3. Results & Discussion

Needs Analysis Results

At this stage, data mining was carried out through questionnaires and interviews with representatives of social science teachers in three junior high school level schools. in Jember Regency, namely MTs Negeri 01 Jember, SMPN 03 Arjasa Jember and SMP Nuris Jember on 5 to 6 May 2022.

The results of filling out the questionnaire and interviews with social studies teachers in the three schools showed that teachers understand that cognitive diagnostic assessments can be used to identify student competency attainment. The teacher also stated that cognitive diagnostic assessments need to be carried out periodically at the beginning of the social studies learning process to determine students' learning progress and see the readiness of students to learn. However, most teachers have yet to be assessed because neither the school nor the government developed an instrument. Teachers feel that they need time to prepare the assessment, and the teachers must also prepare the entire learning process. The teacher stated that at least a diagnostic assessment instrument is needed, either a book or a module in printed or *file form*, which can be used to carry out the assessment recommended by the government.

Planning

After gathering information and analyzing needs related to diagnostic assessments, the next step is planning related to product development. Product development planning begins with selecting an analysis of core competencies (CC) and basic competencies (BC) to formulate appropriate indicators and learning objectives. The product's initial development was a cognitive diagnostic assessment module for Class VIII; then, it was seen as a whole that the existing core competencies and EC for the junior high school level, especially social studies subjects.

Based on the description of core competencies in the curriculum, it can be observed that the basic competencies contained are mutually sustainable between levels. With other explanations, basic competencies contained at a certain level becomes a prerequisite for the basic competencies for the next level. If you pay attention, basic competencies in class VIII is a deepening of basic competencies Class VII, and basic competencies in class IX is a deepening of basic competencies Class VII and VIII. Based on this, for developing the diagnostic assessment module for Social Studies subjects for Class VIII, two groups of basic competencies must be considered, namely the Class VII and VIII basic competencies groups.

The basic competencies mapping process continued with the preparation of the contents of the diagnostic assessment module in the form of a grid of cognitive diagnostic assessment questions, diagnostic assessment questions, possible student answers, answer keys to diagnostic assessment questions, coding guidelines for diagnostic assessment questions as well as interpretation and follow-up. This format refers to the Early Learning Diagnostic Assessment Module published by the Center for Assessment and Learning, Research and Development Agency, and Books of the Ministry of Education and Culture.

At this planning stage, the packaging of the initial product *draft was* also determined in the form of a "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII". After the initial product *draft* was prepared, a product feasibility instrument was developed and given to material/content experts, design experts, and discussion experts, which was used as a consideration for product revision. In addition, supporting instruments were developed, such as response questionnaires and interview guidelines for teachers.

Product Development

The product being developed is a "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII". The development of this module consists of 4 criteria: (1) physical design, (2) text design, (3) visual design, and (4) content components.

Physical Design

Physical design "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII" This is developed according to the desired product specifications as a module for teachers. The physical design of the development of "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII". Will be described below.

Outer Cover

The product developed is in the form of a module for teachers. The outer cover is designed with a diagnostic assessment theme in mind. The color of the outer cover is made on a white base. This color selection has been designed in such a way according to the characteristics of the teacher. Details of the outer cover of the product can be seen in Figure 1 below.

Figure 1
Outer Cover of "Science Diagnostic Assessment Module
Social Junior High Schools. Class VIII"

Page Size

The size of the paper used to print the "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII" is B5 ISO: 17.6 cm x 25 cm. The cover is printed in *full color with doff* lamination with 210 gsm *Art Carton* paper. The module's contents are printed in *full color* with 72 gr *book paper*. The selection of the B5 size is adjusted to the ISO standard and also because the size is representative or appropriate and adequate to carry out creations and explorations in developing designs and layouts for writing, illustrations, and so on, and not too small and too big. Hence, it is suitable for teachers.

Text Design

Text design in developing "Diagnostic Assessment Module of Social Sciences for Junior High Schools. Class VIII" This includes several elements, including font size and type, text spacing, and paragraph width.

Font Size and Type

The size and typeface developed for most parts of this product is *Arial*. The font size on the product is 12 points for the content and 16 for writing the title and subtitle.

Text Space

The type of spacing used in the module *combines vertical and horizontal spacing*. It is hoped that the reader will be able to focus more attention and more easily understand the meaning of the text. This type of combination spacing is used to get around so that the content of a text is easy to understand. Besides that, it attracts the reader's attention in terms of appearance.

Paragraph Width

The ideal paragraph is just a short paragraph. Too long lines tire the eye and make it difficult for readers to find the following line. Thus, the arrangement of paragraph widths used in this developed product does not exceed the abovementioned limits. It is intended that readers, especially students, feel comfortable when reading the contents of the "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII".

Visual Design

This visual design contains the use of color, images, and illustrations. The following explains the visual design in the "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII".

Color

Background color in the description of the text on the product being developed is dominated by white, and in writing, the text uses black. It aims to get clarity and ease in reading the description of the material in the "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII" so that the message in the text can be conveyed well to the readers, especially the teacher as a user. Color variations are used in the title and sub-headings to make it more interesting.

Pictures and Illustrations

The image presented in the development of the "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII" These are actual images and illustrations taken from various sources.

Content Component

The content component of the "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII" developed will be described as follows.

Introduction

The content of the introduction is the author's attempt to communicate with readers by applying several principles, namely: (1) creating the image that "The Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII" which is prepared is feasible and essential to learn, (2) directs the focus of the module on things that are assumed to be by the needs of the reader.

List of contents

The table of contents was created to make it easier for students to find the sections in the "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII" by looking at the page listed in the table of contents. In this case, the table of contents also outlines the overall organization of the module's content.

Instructions for use

The user manual contains a guide on using the "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII".

Diagnostic Assessment Questionnaire

The section contains a description of the grid of cognitive diagnostic assessment questions in the form of a table with the contents of the table in the form of essential competencies, classes, subject matter, question indicators, question forms, question numbers, and information that contains basic competencies for the questions that are prepared as prerequisites for basic competencies at the next grade level.

Diagnostic Assessment Questions

This section contains ten items of diagnostic assessment with material spread throughout the basic competencies for the knowledge competence of Social Science subjects for Class VII Junior High School. This diagnostic assessment question, in its implementation, will be given by the teacher and done by students at the beginning of the learning topic regularly. The questions presented consist of questions in the form of multiple choice and descriptions.

Possible Student Answers

This section contains the possible answers of students as well as possible reasons for students to choose the answer or answer the question.

Answer Key to Diagnostic Assessment Questions

This section contains detailed answer keys and explanations for each diagnostic assessment question.

Diagnostic Assessment Question Coding Guidelines

This section contains the coding of the answers chosen or given by students to the assessment questions with reasons that fall into the category of students' understanding of the answers to questions. The categories and coding for the answers to the questions consist of "Understand (U)," "Understand Partly (UP)," and "Do not understand (DU)."

Interpretation and Follow-up

This section contains the continuation of the coding carried out with the possibility of student answers that have been given and then interpreted. Ultimately, the teacher decides whether students can continue to study the next basic competencies or should be given remedial and reinforcement learning.

Bibliography

The bibliography on "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII" contains reading resources that can enrich knowledge and understanding.

Expert Trial Data

The initial development product was a "Diagnostic Assessment Module of Social Sciences for Junior High Schools. Class VIII," which has been completed and will be prepared to be validated by experts. The purpose of the initial product was "The Diagnostic Assessment Module of Social Sciences for Junior High Schools. Class VIII" handed over to the experts to get helpful feedback and suggestions for the improvement or refinement of the developed product. The validation results from these experts are used as the basis for revising the product to be produced. In the following, the data on the results of the material expert trials will be presented. Content, design experts, and linguists.

Material/Content Expert Trial Data

"Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII" has its content characteristics, namely diagnostic assessment materials related to social studies subjects. The content contained in this product is intended for teachers of Junior High Schools. Class VIII has an essential purpose so that it can be applied periodically at the beginning of the learning process on specific topics. This is the reason for the need for a material expert who has mastery of social studies material and the principles of diagnostic assessment to assess and provide relevant input to the material presented in this "Secondary Social Science Diagnostic Assessment Module. Class VIII".

In this study, the researcher asked for the willingness of Dr. Moh. Sutomo, M.Pd., to validate the initial *draft* of the product and which will be piloted. He is an expert lecturer in social studies and learning assessment. He is a Social Sciences Tadris Lecturer with an educational *background* in S3 Learning Technology.

From the data analysis of the material expert validation questionnaire, the validity percentage was 78.18%. Based on the criteria used according to Akbar and Sriwiyana's (2011) formula, it can be concluded that the results obtained regarding the module material are valid so that the product can be used with several improvements. However, various suggestions from these experts are still being considered to revise this product before being tested.

Design Expert Trial Data

"Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII" was developed for Junior High Schools students. Class VIII, the module design must be appropriate to the user's characteristics. Based on these reasons, it takes an expert in instructional media design to assess and provide relevant input to the teaching materials in this learning module. In this study, the researcher asked for the willingness of Dr. A. Suhardi, M.Pd., to validate the initial *draft* of the product to be tested. He is a lecturer who is an expert in learning technology.

From the design validation questionnaire analysis, the validity percentage was 87.50%. Based on the criteria used according to the formula of Akbar and Sriwiyana (2011: 207), it can be concluded that the results obtained related to the module design are valid so that the product can be used. However, some suggestions from experts are considered to revise this product before being tested.

Language Expert Trial Data

Language has a vital role in the preparation of a module. The language used in the "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII" must be appropriate. For these reasons, a linguist must assess and provide relevant input to the "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII". In this study, the researcher asks for the willingness of Erisy Syawiril Ammah, M. Pd., to validate the initial *draft* of the module to be piloted. She is a lecturer who is an expert in the field of Indonesian.

From the language validation questionnaire analysis, the validity percentage was 89.33%. Based on the criteria used according to the Akbar and Sriwiyana (2011) formulas, it can be concluded that the results obtained regarding the language module are valid so that the product can be used without revision. However, various suggestions from these experts are still being considered to revise this product before being tested.

Individual Trial Data

After the product design revision, individual trials are carried out based on expert validation results. The expert validation test obtained a product as a "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII" valid. The individual trials can then be carried out. The trials took place on 21 October 2022. Individual trials were conducted on one social studies teacher representative from SMPN 01, Nuris Jember, Riza Ainun Bahar, S.Pd., M.Pd. The teacher has an educational background in Masters in Social Sciences Education. From the results of this trial, data will be obtained on whether the developed module is valid and suitable for use as a cognitive diagnostic assessment at the beginning of social studies learning.

The teacher carried out the steps for implementing a cognitive diagnostic assessment, starting with studying the problem grid, especially on essential and prerequisites for basic competencies in Class VIII social studies learning. Second, according to the studied material, the teacher provides the students with diagnostic questions already available in the module. Third, the teacher analyzes the results of working on diagnostic questions by looking at the coding guidelines for diagnostic assessment questions, interpretation, and follow-up. Finally, the teacher concludes the diagnostic assessment results, whether they can directly learn the following material in class VIII or must do remedial learning.

At this stage, trials were also conducted on 1 class VIII student representing MTsN 01 Jember. The trials on these students focused on testing the formulation of the questions presented in the diagnostic assessment module. From the results of this trial, data will be obtained on whether the questions developed in the module are genuinely valid and suitable for cognitive diagnostic assessment at the beginning of social studies learning.

At this stage, data were obtained regarding the trial response in the form of responses filled in the user response questionnaire (teachers and students) to the "Social Sciences Diagnostic Assessment Module for Junior High Schools. Class VIII" was used.

From the results of the analysis of the questionnaires, the percentage validity of the questionnaire was obtained for teachers at 83.33 %, and the percentage of validity of the questionnaire for students at 92.00 %. Based on the criteria used according to the Akbar and Sriwiyana (2011) formula, it can be concluded that the module is very valid so that the product can be used without revision. However, various suggestions are still being considered to revise this product before being tested in the field trial stage.

Field Trial Data

The results of the main field trials can be carried out if the initial field trials have been revised. At this stage, the module draft will be tested from the individual test stage. The subjects of the field trial were Class VIII social studies teachers from three schools, namely MTsN 01 Jember, SMPN 03 Arjasa Jember, and SMP Nuris Jember. All students in Class VIII were selected in each school in the 2022/2023 Academic Year and were also the subject of this field trial. At MTsN 01 Jember, with a total of 28 students, 20 students were used at SMP 03 Arjasa Jember, and 25 students were used at SMP Nuris Jember. The main field trials will start on 01 November 2022 and until 04 November 2022.

Implementation of Main Field Trials

Learning steps using the " Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII" is as follows.

Initial activity

Learning begins with prayer activities and student attendance. The teacher explains the initial assessment using the " Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII". Then the teacher conducts apperception activities to explore students' initial knowledge about the topics in the assessment in the " Social Sciences Diagnostic Assessment Module for Junior High Schools. Class VIII".

Core activities

In this activity, students were first directed to work on assessment questions on the " Diagnostic Assessment Module for Junior High Schools Social Sciences. Class VIII " according to the topic/material previously studied. Then the teacher invites students to analyze the answers' results and conclude whether the students have understood the previous material to determine whether learning can be continued on the following material or must be repeated first. Then the teacher carries out the core learning process activities as usual for the material.

Figure 2
Product Field Trial at MTsN 01 Jember
(Tuesday, 01 November 2022)

Figure 3
Product Field Trials at SMP Nuris Jember
(Thursday, 03 November 2022)

Figure 4
Product Field Trials at SMPN 03 Arjasa
(Friday, 04 November 2022)

End activities

At the end of the activity, students write conclusions from what they have learned. The teacher gives assignments as a follow-up.

Main Field Trial Results

Results of Testing the Effectiveness of Teaching Materials through Teacher Responses

The response from the teacher is also an indicator of the effectiveness of the learning module developed in field trials. The teacher's response can be known by filling out the teacher's response questionnaire and interviews. The teacher's response questionnaire aims to determine the teacher's response after using the Diagnostic Assessment Module for Junior High Schools Social Sciences. Class VIII".

Based on the results of the questionnaire analysis, the teacher's response to this showed an average of 90.00 %. According to the analytical study in Chapter III, an average of 90.00 % is in the very high category. The results of direct interviews with teachers support the data. In the interview, the teacher explained that using the cognitive diagnostic assessment module at the beginning of social

studies learning helped the teacher know student learning readiness, map student abilities, and design learning according to the student's condition. According to the teacher, there are visible changes in terms of the readiness and motivation of students in learning. This shows the response given by the teacher after using the Diagnostic Assessment Module for Junior High Schools Social Sciences. Class VIII" in learning can support the level of effectiveness of social studies learning.

Results of Testing the Effectiveness of Teaching Materials through Student Responses

To determine the effectiveness level of using modules in social studies learning, a module effectiveness test was carried out whose data was obtained from students' responses as an indicator. Student responses can be identified through filling out student response questionnaires and interviews. The student response questionnaire aims to determine students' responses after the teacher uses the "Social Sciences Diagnostic Assessment Module for Junior High Schools at the beginning of the learning process. The responses of 73 students (Class VIII students from three different schools) to this module showed an average of 82.01 %.

According to the analytical review, an average of 82.01 % is in the very high category. The results of interviews with representatives of the students support the data. Based on the results of these interviews, it can be concluded, in general, that students feel more ready to learn after previously working on the questions on " Module Diagnostic Assessment of Social Sciences Junior High Schools. Class VIII". Students revealed they could determine whether they understood or did not understand the material studied before starting learning. They also hope teachers can provide diagnostic test questions more often before learning. This shows that the responses given by students after using the module can support the effectiveness of the " Middle School Social Sciences Diagnostic Assessment Module." Class VIII."

Product Revision

Revision on the development of the " Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII" divided into three stages, namely: (a) the first revision stage, namely expert analysis; (b) the second revision phase, namely individual field trials; and (c) the third revision stage of the main field trials consisting of the responses of subject teachers and students.

First Revision Stage

Material Expert Response Data to the "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII"

Material expert response data to the " Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII" is presented in Table 2 below.

Table 2

Material Expert Response Data to the "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII"

Expert Advice	Revision	Information
The introductory section comprehensively lists core competencies and basic competencies for the reader's reference and comparison.	Adding core competencies and basic competencies in the introductory "Diagnostic Assessment Module for Junior High Schools Social Sciences " section. Class VIII"	Revised
The identity on the question grid needs to be completed within the semester.	We are adding a semester to the identity of the question grid.	Revised

Source: Material/Content Validation Questionnaire Results

Based on Table 2 above, it can be seen that there are several suggestions given by material experts on the "Social Sciences Diagnostic Assessment Module for Junior High Schools. Class VIII". All suggestions are welcome to revise the product.

Data on Design Expert Responses to the "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII"

Table 3

Data on Design Expert Responses to the "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII"

Expert Advice	Revision	Information
It must be completed with a bibliography at the end of the "Social Sciences Diagnostic Assessment Module for Junior High Schools. Class VIII"	Completing the "Social Sciences Diagnostic Assessment Module for Junior High Schools. Class VIII" with a bibliography	Revised
The primary color on the cover of "Social Sciences Diagnostic Assessment Module for Junior High Schools. Class VIII" do not be white.	We are changing the color of the "Social Sciences Diagnostic Assessment Module for Junior High Schools. Class VIII" cover to snow-green.	Revised
He added author and team names.	It adds the name of the author and team.	Revised

Source: Design Validation Questionnaire Results

Based on Table 3 above, it can be seen that design experts give several suggestions for the "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII". All suggestions are welcome to revise the product.

Data on Linguists' Responses to the "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII"

Table 4

Data on Language Expert Responses to the "Social Science Diagnostic Assessment Module for Middle Schools. Class VIII"

Expert Advice	Revision	Information
In the introductory part, the use of the diction 'preface' can be changed to 'preface.'	Changing the diction of 'preface' to 'preface'	Revised
The use of the diction 'student' can be changed to 'student.'	Changing the diction of 'student' to 'student'	Revised

Source: Language Validation Questionnaire Results

Based on Table 4 above, it can be seen that linguists give several suggestions for the "Social Sciences Diagnostic Assessment Module for Junior High Schools. Class VIII". All suggestions are welcome to revise the product.

Second Revision Stage

This second revision stage was carried out after implementing the individual test. Suggestions and input from individual tests are used as improvements to the product. Some of the suggestions obtained from individual trials consisting of the results of user trials, namely teachers and students, are presented in Table 5 below.

Table 5

Individual Trial Data on the "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII"

Suggestion	Revision	Information
Question number 1 must be added with a visual rainfall distribution map so students can study the questions correctly.	An image is given in question number 1	Revised

Source: Teacher and Student Validation Questionnaire Results in Individual Tests

Based on Table 5 above, it can be seen that individual users give several suggestions for the "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII". All suggestions are welcome to revise the product.

Third Revision Stage

This third revision stage was carried out after implementing the main field trials. Suggestions and input from the main field trials are used for product improvement. During the main field trials, suggestions came from Class VIII social studies students and teachers in three schools: MTsN 01 Jember, SMPN 03 Arjasa Jember, and SMP Nuris Jember. These suggestions and input are presented in Table 6 below.

Table 6

Main Field Trial Data for the "Diagnostic Assessment Module Junior High Schools Social Sciences. Class VIII"

Suggestion	Revision	Information
We need to fix some parts of the module	Repairs were made according to user suggestions	Revised
The use of language in the assessment questions can be slightly adjusted to the understanding of the language of junior high school students.	Improved use of language in the formulation of assessment questions	Revised

Source: Teacher and Student Response Questionnaire Results

Based on Table 6 above, it can be seen that there are several suggestions given by users in the field regarding the "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII". All suggestions are welcome to revise the product. Revisions carried out through three stages of improvement will support better product development to produce the "Social Sciences Diagnostic Assessment Module for Junior High Schools. Class VIII" with good quality.

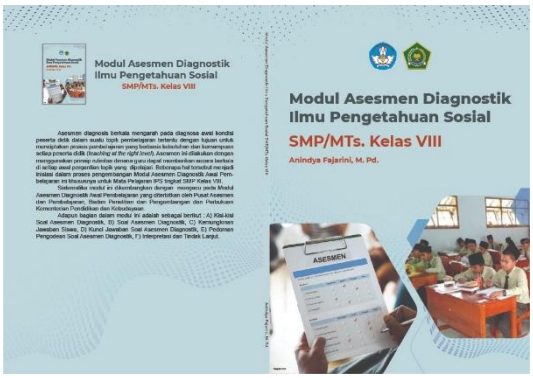
The Final Product

Based on the data analysis from the results of expert trials, individual trials, field trials, and effectiveness tests, it can be concluded that the "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII" has been declared valid or suitable for use. However, more comprehensive trials (dissemination) can be carried out to refine this product further. The final product of this development is a "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII".

This product can be used as printed products, as for the printed display "Diagnostic Assessment Module for Junior High Schools Social Sciences. Class VIII" is like Figure 5 below.

Figure 5

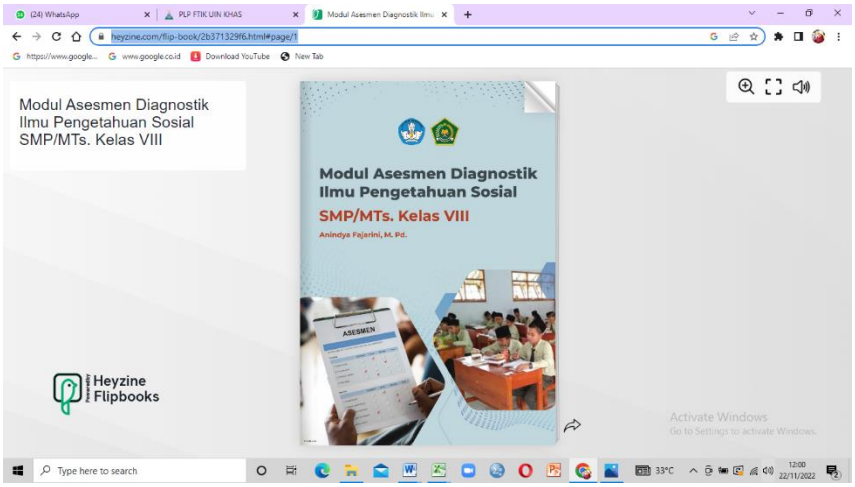
Print Display of "Social Science Diagnostic Assessment Module"



This product can be used in digital form on Heyzine Flip Book via the link https://heyzine.com/flip-book/2b371329f6.html. The display of the "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII" digital version can be seen in Figure 6 below.

Figure 6.

Digital Display of "Social Science Diagnostic Assessment Module"



4. Conclusion

"Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII" is developed in stages according to the Borg&Gall development model. The diagnostic assessment instrument was developed in the form of a module. The validation results of material, design, and language experts showed percentages of 87.18%, 87.50%, and 89.33%. The developed module is valid and can be tested in the field. The results of the limited trial showed a percentage of 83.33% (from teachers) and 92.00% (from students). Large-scale test results show an average percentage of 90% (from teachers) and 82.01% (from students). The results of product trials at the individual trial and field trial stages show that the module is very valid so that the product can be used. The responses from students and teachers indicate that using the diagnostic assessment module can support the effectiveness of social studies learning. The development of the module can be an instrument used by participants to educate in knowing the ability of beginning students, map the ability of participants to educate, and plan appropriate learning with the ability participants educate. For participants to educate themselves, the module's existence can make them more ready to face IPS learning with the following material. Development scale "Social Science Diagnostic Assessment Module for Junior High Schools. Class VIII," while limited to a few middle/ junior high schools in Jember Regency, is not yet in the direction of dissemination; therefore, it is suggested to dobe stage dissemination product.

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