



Komariah¹
 Rufi²

ANALYSIS OF MULTIPLE-CHOICE QUESTIONS IN CLASS VII MATHEMATICS AT SMP NEGERI 6 BANGKALAN

Abstrak

Penelitian ini bertujuan upaya memperbaiki proses pembelajaran dan penilaian dalam pembelajaran di kelas VII di SMP Negeri 6 Bangkalan. Soal ujian yang digunakan oleh guru hendaknya diuji kelayakannya terlebih dahulu untuk mengetahui masing-masing butir soal dapat digunakan untuk mengukur kompetensi yang akan diukur. Penelitian ini dilakukan dengan metode kuantitatif. Instrumen yang digunakan adalah soal pilihan ganda pada mata pelajaran matematika. Analisis data dilakukan dengan menggunakan SPSS 25.0. Hasil penelitian menunjukkan: (1) Validitas butir soal pilihan ganda mata pelajaran matematika pada peserta didik kelas VII di SMP Negeri 6 Bangkalan terdapat 20 soal valid dengan persentase 100% soal berkategori valid. Proporsi tingkat validitas soal didominasi oleh soal-soal yang valid sehingga soal dapat dikategorikan bervaliditas tinggi, (2) Reliabilitas butir soal pilihan ganda mata pelajaran matematika itu penting pada peserta didik kelas VII di SMP Negeri 6 Bangkalan memiliki tingkat reliabilitas tinggi dengan $R1 = 0,937$, ini berarti soal reliabel atau hasil penilaian relatif stabil, dan dapat dipercaya/andal, (3) Tingkat kesukaran butir soal pilihan ganda mata pelajaran matematika itu penting pada peserta didik kelas VII di SMP Negeri 6 Bangkalan menunjukkan tingkat kesukaran soal rendah yaitu 0% sedangkan tingkat sedang dengan persentase 75% sehingga membuat soal berkategori mudah yaitu 15%, (4) Daya pembeda butir soal pilihan ganda mata pelajaran matematika itu penting pada peserta didik kelas VII di SMP Negeri 6 Bangkalan pada terdapat 100% atau sebanyak 20 soal berkategori daya pembeda baik. Dari hasil kesimpulan yang telah dipaparkan di atas, hendaknya guru terus melakukan upaya-upaya yang dapat meningkatkan kompetensi diri dan kualitas pembelajaran yang dilakukan, salah satunya dengan menguji kelayakan soal ulangan sebelum digunakan dengan melakukan uji validitas, uji reliabilities, uji daya beda, uji tingkat kesukaran

Kata Kunci: Analisis, Soal, Pilihan Ganda, Matematika.

Abstract

This research aims to improve the learning and assessment process in class VII at SMP Negeri 6 Bangkalan. The test questions used by teachers should be tested for suitability first to find out whether each question item can be used to measure the competency to be measured. This research was conducted using quantitative methods. The instrument used is multiple choice questions in mathematics subjects. Data analysis was carried out using SPSS 25.0. The research results show: (1) The validity of multiple-choice questions in mathematics for class VII students at SMP Negeri 6 Bangkalan, there are 20 valid questions with a percentage of 100% of the questions in the valid category. The proportion of validity level of questions is dominated by valid questions so that the questions can be categorized as having high validity, (2) The reliability of multiple choice questions in mathematics is important for class VII students at SMP Negeri 6 Bangkalan has a high level of reliability with $R1 = 0.937$, This means that the questions are reliable or the assessment results are relatively stable and can be trusted/reliable. (3) The difficulty level of multiple choice questions in mathematics subjects is important for class VII students at SMP Negeri 6 Bangkalan showing a low level of question difficulty, namely 0%, while the medium with a percentage of 75% so that the questions are in the easy category, namely 15%, (4) The distinguishing power of multiple choice questions in mathematics is important for class VII students at SMP Negeri 6 Bangkalan, there are 100% or as many as 20 questions in the good distinguishing power category. . From the conclusions

^{1,2)}Universitas PGRI Adi Buana Surabaya
 email: batrisyadanfia@gmail.com, rufi@unipasby.ac.id

presented above, teachers should continue to make efforts to improve their own competence and the quality of the learning carried out, one of which is by testing the suitability of the test questions before they are used by carrying out validity tests, reliability tests, different power tests, level tests. difficulty

Keywords: analysis, questions, multiple choice, mathematics.

INTRODUCTION

Evaluation is carried out to determine the achievement of learning objectives by students. Evaluation activities are carried out by teachers by giving tests to students. States that in carrying out the process of assessing learning outcomes, a teacher should use various assessment techniques including giving tests (Alfiana et al., 2021; Inawati et al., 2022; R. P. Sari, 2022). A test is a process to see the achievement of competencies that have been mastered by students in certain aspects of learning outcomes.

This test can also be said to be a formative evaluation, this is because the teacher wants to know every mastery of the material for each chapter that has been taught by the teacher (Inawati et al., 2022; Mira et al., 2022; Saputra et al., 2022). When giving tests to students, one of the instruments given to students is multiple choice questions (objective). The use of multiple-choice instruments that will be given to students must be of good quality. (Ismiyati et al., 2023; Pradani & Efendi, 2023; Verawati et al., 2023) state that good questions are questions that can describe the student's condition at a certain level of ability and skill. Instrument quality is very necessary because it can help teachers choose the best questions with valid and reliable categories. A question is said to be valid if it can provide empirical information and is in accordance with what is measured in learning and is said to be reliable if it provides constant results after repeated measurements. The questions are analyzed as a whole and each of the evaluation questions (Khairiati, 2022; Kurniawan, 2022; Wulandari et al., 2022). Analysis of the questions includes the level of difficulty and distinguishing power.

Analysis of question items is carried out in order to find out whether the questions that students are working on are too easy or difficult and also to find out the ability of the question items to distinguish between students who have or have not mastered the material. This shows the importance of analyzing question items through validity tests, reliability tests, differentiability, level of difficulty (Ambarwati & Ismiyati, 2022; Masulili et al., 2022; Purwaningsih, 2022).

A valid test is a test that can be used to measure what will be measured. Analysis of multiple-choice questions is a systematic procedure, which will present data specific to the evaluation questions prepared (Nur Cahyo et al., 2022; R. P. Sari, 2022; Siskawati et al., 2022). The following are things that must be considered in analyzing the questions so that the evaluation questions can be said to be good. The first is test validity, which is the extent to which the evaluation questions measure what they are supposed to measure. Second, the reliability of the evaluation items describes the consistency of the test. Third, the difficulty level of the questions is the ratio of the number of students who answered correctly to the total number of students. Fourth, differentiation power, which is the ability of evaluation questions to differentiate between students who have mastered and have not mastered the subject matter. The five levels of question distraction are a description of students' answer choices regarding the possible answers that have been paired with each evaluation question item. Sixth, the effectiveness of distracting questions. In general, the question item analysis method includes two things, including analysis of validity and reliability of the questions ("Analysis of Simulated Question Items for School Exams in Mathematics for SMA Negeri 1 Salaman," 2022; Fahmi et al., 2022; Santosa & Badawi, 2022).

Question items can be said to be good, if each question item falls into the medium category which is neither too difficult nor too easy. If the questions used are too easy or too difficult, the teacher will not be able to differentiate students with low abilities and students with high abilities (Aji Saputra & Sayono, 2022; Angelina et al., 2022; Subando et al., 2022).

In objective tests such as multiple choice, each question item is equipped with several possible answers. One of these choices is the real answer while the other choices are distractors. Items that are categorized as good quality are if all the distractors are functional. If the question item is answered correctly by all students then this indicates that the distractor or distractor of the question item is not working because there is only one option chosen by the students. Meanwhile, if the question items are chosen evenly, this is a sign that all of the distractors can function as an answer distractor. (Inawati et al., 2022; Musdhalifah et al., 2022; Padmadewi et al., 2022) the distractor function will function according to its function if it is chosen by at least 15% of all participants taking the test.

From the results of observations made in class VII at SMP Negeri 6 Bangkalan, the low learning outcomes of students is one of the impacts of the teacher's lack of sensitivity in analyzing the evaluation questions given to students. When the exam takes place, the teacher does not know whether the questions used are appropriate to measure the students' abilities. This is because there is no analysis of the test items to measure validity, reliability, discernment, distractor function and level of difficulty in the test questions used, so the teacher also does not know whether each question is appropriate and can carry out its function well or not.

RESEARCH METHODS

This research is a type of quantitative descriptive research. Quantitative descriptive research is research that emphasizes data analysis using numerical calculations or statistics (Creswell, 2015). explains that the aim of quantitative descriptive research is to describe an object/activity that is of interest to the researcher. This research was carried out in October 2023.

The method used in this research is descriptive research. This descriptive research is not intended to test a particular hypothesis, but only describes what really happens about a symptom or situation. The research carried out is attempted to be as objective as possible regarding matters that are the center of attention and support the research. Researchers aim to collect data, describe it, analyze it, until finally they can draw conclusions as an answer to the research problem they pose.

The research procedures or stages in this research are as follows: (1) compiling instruments or things related to measurement, (2) collecting data, (3) describing the data that has been collected, (4) analyzing the data, (5) formulating conclusion from the analysis results.

The subjects of this research were class VII students at SMP Negeri 6 Bangkalan, consisting of 30 students. Data collection in this research used interviews and documentation. Researchers conducted direct interviews with class VII homeroom teachers at SMP Negeri 6 Bangkalan, while researchers used documentation to collect data on the initial conditions of learning outcomes for class VII students at SMP Negeri 6 Bangkalan. Quantitative data analysis techniques were carried out to determine the validity, reliability, level of difficulty, distinguishing power and level of distracting questions using the SPSS 25 application program. The results of data analysis in this research were to describe the results of the analysis regarding mathematics questions. After the results of the student's work have been assessed, the scores are then presented in the form of data which is used to determine the quality of the questions.

RESEARCH RESULT

The object of the research was 20 multiple choice questions which were tested on 30 class VII students at SMP Negeri 6 Bangkalan. The items were analyzed statistically including validity tests, reliability tests, difficulty index tests, and discrimination tests.

The validity test is carried out in two ways, namely 1) comparing the Pearson correlation value or R Value with the R tables, the R Value must be greater than the R tables (R Value > R tables). 2) Combining the Pearson correlation value with the significance obtained, the value obtained must be positive and supported by a significance value <0.05. Test results using Pearson correlation can be seen in table 1.

Table 1 Validity Test Results

item	R value	Significance Value	Validitas
1	.623**	0.000	Valid
2	.590**	0.001	Valid
3	.851**	0.000	Valid
4	.859**	0.000	Valid
5	.730**	0.000	Valid
6	.758**	0.000	Valid
7	.469**	0.009	Valid
8	.587**	0.001	Valid
9	.851**	0.000	Valid
10	.643**	0.000	Valid
11	.472**	0.008	Valid
12	.859**	0.000	Valid

13	.513**	0.004	Valid
14	.719**	0.000	Valid
15	.796**	0.000	Valid
16	.696**	0.000	Valid
17	.566**	0.001	Valid
18	.643**	0.000	Valid
19	.719**	0.000	Valid
20	.492**	0.006	Valid

The reliability test based on Chronbach alpha compares the test result values with a magnitude of 0.06. If the test result value is greater than 0.06 then the question item is declared reliable. For the object of this research, the Chronbach alpha value is 0.937, so it can be stated that the results are reliable. Data is displayed in table 2.

Table 2 Reliability Test

Reliability Statistics

Cronbach's Alpha	N of Items
.937	20

The question item difficulty index is carried out to identify the level of difficulty of each question item by comparing the test results and the question item difficulty index in table 2. The test results show that the question items are at an easy and medium level with a presentation of 20% of the questions being in the easy category and 80% questions are in the medium category. More detailed results are presented in table 6.

Table 3 Difficulty Index of Question Items

Item	R Value	R tables	Criteria
1	0.50	≤ 0,30 Difficult	Medium
2	0.73	0,30 - 0,70 Medium	Easy
3	0.67	≥ 0,70 Easy	Medium
4	0.47		Medium
5	0.67		Medium
6	0.50		Medium
7	0.83		Easy
8	0.70		Medium
9	0.50		Medium
10	0.70		Medium
11	0.63		Medium
12	0.47		Medium
13	0.57		Medium
14	0.73		Easy
15	0.53		Medium
16	0.77		Easy
17	0.60		Medium
18	0.70		Medium
19	0.73		Easy
20	0.60		Medium

The question discrimination power test functions to describe the differences in abilities possessed by each respondent and compare them with the question discrimination power categories in table 3. In this study, the results of the question discrimination power test stated that all the questions tested were in the superior category. The following more accurate data can be seen in table 4.

Table 4 Differentiating Power Test

Item	R Value	R tables	Criteria
1	0.568	0 - 0.19 = Bad 0.20 - 0.29 = Medium 0.30 - 0.39 = Good 0.4 = Very Good > 0.4 = Excellent	Excellent
2	0.544		Excellent
3	0.824		Excellent
4	0.837		Excellent
5	0.686		Excellent
6	0.720		Excellent
7	0.417		Excellent
8	0.527		Excellent
9	0.827		Excellent
10	0.589		Excellent
11	0.425		Excellent
12	0.837		Excellent
13	0.468		Excellent
14	0.700		Excellent
15	0.762		Excellent
16	0.662		Excellent
17	0.527		Excellent
18	0.589		Excellent
19	0.673		Excellent
20	0.422		Excellent

DISCUSSION

This research was conducted to analyze multiple choice questions by examining the quality of research questions in the important mathematics subject class VII at SMP Negeri 6 Bangkalan. This question item analysis is designed to identify deficiencies in the question items so that they can be corrected before they are used in the next evaluation test. Analysis of test items includes: validity, reliability, level of difficulty, distinguishing power. Validity has a value from high to low, the higher the validity value, the better the level of validity (Arwansyah et al., 2022; Pamujo & Romadhoni, 2022; Prawiki & Helendra, 2022). Question validity is related to the extent to which the question items can measure the learning outcomes that are to be measured from students. Based on the results of quantitative analysis of the level of validity of questions in class VII mathematics at SMP Negeri 6 Bangkalan for the 2023/2024 academic year in Table 1, it can be seen that 100% of the questions are categorized as valid. The proportion of validity levels of questions is dominated by valid questions so that questions can be categorized as having high validity.

Table 5. Results of Question Item Validity Analysis

Category	Total	Percent	Question Number
Valid	20	100%	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20

Table 5. Results of Validity Analysis of Question Items Category Total Percentage of Valid Question Numbers totalling 20. (Matondang et al., 2022; Mira et al., 2022; Yudhanto, 2022) explains that test score reliability is the level of accuracy and consistency of the test score. Test reliability is the level of accuracy and the same results over repeated measurements. The results of the quantitative analysis of the level of reliability of the question items show that the question items have a high level of reliability correlation with $R1 = 0.937$, this means that the questions are reliable or the assessment results are relatively stable and can be trusted/reliable.

Table 6. Results of Reliability Analysis of Question Items

Category	Description
R1	0,937

Table 6. Results of Reliability Analysis of Question Items Category Description R1 0.937 The difficulty level of a question item is the chance of answering correctly a question that is not too easy or

not too difficult. The greater the difficulty level index obtained and the calculation results, the easier the question is (Rismaulhijjah & Kuswanti, 2022; Saputra et al., 2022; V. N. I. Sari et al., 2022). The results of the analysis of the level of difficulty of the questions in Table 6 show that class VII at SMP Negeri 6 Bangkalan shows a low level of difficulty of the questions, making the questions in the easy category very high.

Table 7 Results of Difficulty Level Analysis

School	Difficult		Medium		Easy	
	total	Percent	total	Percent	total	Percent
SMP Negeri 6 Bangkalan	0	0%	15	75%	5	25%

(Himawan & Nurgiyantoro, 2022; Kusumayanti & Jannah, 2022; Rishan & Sulaiman, 2023) revealed that the discriminating power of questions is the ability of a question item to be able to differentiate between students who have mastered the material and students who have not mastered the material being tested. The results of the differentiating power analysis in Table 7 show that the differentiating power analysis of class VII mathematics subjects at SMP Negeri 6 Bangkalan for the 2023/2024 school year contained 25% or 5 questions in the easy or good differentiating power category, 75% or 15 questions in the medium and good categories. 0% or 0 questions in the difficult or bad category.

CONCLUSION

Based on the results of the analysis and discussion, the conclusions from this research are (1) The validity of multiple-choice questions in mathematics for class VII students at SMP Negeri 6 Bangkalan, there are 20 valid questions with a percentage of 100% of the questions in the valid category. The proportion of validity level of questions is dominated by valid questions so that the questions can be categorized as having high validity, (2) The reliability of multiple choice questions in mathematics is important for class VII students at SMP Negeri 6 Bangkalan has a high level of reliability with $R1 = 0.937$, This means that the questions are reliable or the assessment results are relatively stable and can be trusted/reliable. (3) The difficulty level of multiple choice questions in mathematics subjects is important for class VII students at SMP Negeri 6 Bangkalan showing a low level of question difficulty, namely 0%, while the medium with a percentage of 75% so that the questions are in the easy category, namely 15%, (4) The distinguishing power of multiple choice questions in mathematics is important for class VII students at SMP Negeri 6 Bangkalan, there are 100% or as many as 20 questions in the good distinguishing power category. From the conclusions presented above, teachers should continue to make efforts to improve their own competence and the quality of the learning carried out, one of which is by testing the suitability of the test questions before they are used by carrying out validity tests, reliability tests, different power tests, level tests. difficulty.

BIBLIOGRAPHY

- Aji Saputra, M. R., & Sayono, J. (2022). Analisis Butir Soal Ujian Mapel Sejarah (Peminatan) Kelas Xii Di Man Sumenep Tahun Ajaran 2021/2022. *Jurnal Pendidikan Sejarah Indonesia*, 5(2). <https://doi.org/10.17977/Um0330v5i2p171-190>
- Alfiana, H., Karyono, H., & Gunawan, W. (2021). Analisis Butir Tes Keterampilan Berpikir Kritis Dan Pengetahuan Prosedural Grammar Bahasa Inggris. *Jinotep (Jurnal Inovasi Dan Teknologi Pembelajaran): Kajian Dan Riset Dalam Teknologi Pembelajaran*, 8(1). <https://doi.org/10.17977/Um031v8i12021p020>
- Ambarwati, Y. F., & Ismiyati, I. (2022). Analisis Butir Soal Pilihan Ganda Ulangan Akhir Semester Genap Mata Pelajaran Kearsipan. *Measurement In Educational Research (Meter)*, 1(2). <https://doi.org/10.33292/Meter.V1i2.144>
- Analisis Butir Soal Simulasi Ujian Sekolah Mata Pelajaran Matematika Sma Negeri 1 Salaman. (2022). *Math Locus: Jurnal Riset Dan Inovasi Pendidikan Matematika*, 3(1). <https://doi.org/10.31002/Mathlocus.V3i1.2341>
- Angelina, G. M., Elfitra, L., & Zaitun, Z. (2022). Analisis Butir Soal Menggunakan Teori Pengukuran Klasik Dan Taksonomi Bloom Pada Ujian Akhir Semester Mata Pelajaran Bahasa Indonesia Kelas Vii Sekolah *Student Online Journal (Soj)*

- Arwansyah, Y. B., Putro Setiawan, K. E., & Yuda, R. K. (2022). Analisis Butir Soal Penilaian Akhir Tahun (Pat) Bahasa Indonesia Kelas Xi Sma Negeri 1 Polanharjo Klaten. *Lingua Rima: Jurnal Pendidikan Bahasa Dan Sastra Indonesia*, 11(2). <https://doi.org/10.31000/Lgrm.V11i2.6620>
- Creswell, J. W. (2015). Penelitian Kualitatif & Desain Riset. In *Mycological Research* (Vol. 94, Issue 4).
- Fahmi, B., Rizqi, S., & Harmeilinda, N. E. (2022). Analisis Butir Soal Bahasa Arab Mas Pondok Pesantren Assalam Kampar Riau. *Ta'lim Al-'Arabiyyah: Jurnal Pendidikan Bahasa Arab & Kebahasaaraban*, 6(1). <https://doi.org/10.15575/Jpba.V6i1.16193>
- Himawan, R., & Nurgiyantoro, B. (2022). Analisis Butir Soal Latihan Penilaian Akhir Semester Ganjil Mata Pelajaran Bahasa Indonesia Kelas Viii Smpn 1 Bambanglipuro Bantul Menggunakan Program Iteman. *Kembara: Jurnal Keilmuan Bahasa, Sastra, Dan Pengajarannya*, 8(1).
- Inawati, Arya, A., & Lasmiatun. (2022). Analisis Tingkat Kesulitan Butir Soal Mata Pelajaran Bahasa Indonesia Buatan Guru. *Bastrando*, Vol 1(No 2).
- Ismiyati, I., Raharjo, T. H., Tusyanah, T., & Sholikhah, M. (2023). Pelatihan Analisis Butir Soal Berdasarkan Teori Tes Klasik Berbantuan Iteman Untuk Meningkatkan Kualitas Instrumen Penilaian. *Japi (Jurnal Akses Pengabdian Indonesia)*, 8(2). <https://doi.org/10.33366/Japi.V8i2.5064>
- Khairiati, K. (2022). Analisis Butir Soal Matematika Pada Instrumen Pretest/Postest Topik Trigonometri. *Tasnim Journal For Community Service*, 3(1). <https://doi.org/10.55748/Tasnim.V3i1.96>
- Kurniawan, T. (2022). Analisis Butir Soal Ulangan Akhir Semester Gasal Mata Pelajaran Ips Sekolah Dasar. *Jurnal Basicedu*, 6(4).
- Kusumayanti, A., & Jannah, N. (2022). Analisis Butir Soal Ujian Masuk Mandiri Uin Alauddin Makassar Dengan Teori Tes Modern. *Mapan : Jurnal Matematika Dan Pembelajaran*, 10(1).
- Masulili, R. R., Dama, L., & Abdul, A. (2022). Analisis Butir Soal Semester Genap Mata Pelajaran Biologi Kelas Xi Di Sman 3 Gorontalo Dan Sman 5 Gorontalo. *Jambura Edu Biosfer Journal*, 3(2). <https://doi.org/10.34312/Jebj.V3i2.7211>
- Matondang, P., Azizah, B., Masdalipa, R., & ... (2022). Workshop Analisis Butir Soal Pada Dosen Institut Teknologi Pagar Alam. *Jurnal Pengabdian Kepada Masyarakat*, 5(01).
- Mira, K., Hayon, V. H. B., & Tinenti, Y. R. (2022). Analisis Butir Soal Pilihan Ganda Pada Materi Pokok Larutan Elektrolit Dan Nonelektrolit Kelas X Ipa Sma Negeri 1 Lamba Leda Manggarai Timur. *Wahana*, 73(2). <https://doi.org/10.36456/Wahana.V73i2.4201>
- Musdhalifah, A., Djuwita, P., & ... (2022). Analisis Butir Soal Ulangan Akhir Semester Ganjil Bermuatan Pelajaran Ppkn Kelas Ii Sd Negeri 4 Kota Bengkulu. ... : *Jurnal Riset Pendidikan ...*, 5(1).
- Nur Cahyo, A., Luriawati, D., & Wagiran, W. (2022). Analisis Butir Soal Penilaian Keterampilan Kebahasaan Pada Pembelajaran Teks Eksplanasi Kelas Xi. *Jbsi: Jurnal Bahasa Dan Sastra Indonesia*, 2(01). <https://doi.org/10.47709/Jbsi.V2i01.1493>
- Padmadewi, A., Hermawan, G. S., & ... (2022). Analisis Butir Soal Ujian Sekolah Bahasa Jepang Kelas Xii Di Sma Negeri 2 Singaraja: Indonesia. ... *Linguistik, Sastra Dan ...*
- Pamujo, & Romadhoni, D. R. M. (2022). Analisis Butir Soal Evaluasi Pembelajaran Pkn Kelas Iv Sekolah Dasar Dengan Iteman Di Kecamatan Banjarnegara. *Conference Of Elementary Studies*.
- Pradani, R. A., & Efendi, A. (2023). Analisis Butir Soal Ujian Sekolah Menggunakan Program Iteman (Analysis Of School Exam Questions Using The Iteman Program). *Indonesian Language Education And Literature*, 8(2). <https://doi.org/10.24235/Ileal.V8i2.11002>
- Prawiki, S. M., & Helendra. (2022). Analisis Kualitas Butir Soal Ujian Akhir Semester Ganjil Tahun Pelajaran 2020/2021 Mata Pelajaran Biologi Kelas X Sma Negeri 1 Teluk Sebong. *Biodidaktika: Jurnal Biologi Dan Pembelajarannya*, 17(2).
- Purwaningsih, E. (2022). Pemahaman Guru Tentang Analisis Kualitas Tes Dan Butir Soal. *Perspektif*, 1(3). <https://doi.org/10.53947/Perspekt.V1i3.98>
- Rishan, M., & Sulaiman, S. (2023). Analisis Butir Soal Tipe Multiple Choice Ujian Akhir Semester Ganjil Kelas X Tahun Ajaran 2022/2023 Mata Pelajaran Pendidikan Agama Islam Di Sma Negeri 1 Padang. *Islamika*, 5(3). <https://doi.org/10.36088/Islamika.V5i3.3517>
- Rismaulhijjah, W., & Kuswanti, N. (2022). Analisis Butir Soal Ulangan Harian Hasil Pengembangan Guru Materi Sistem Gerak Manusia Kelas Xi Ipa. *Berkala Ilmiah Pendidikan Biologi (Bioedu)*, 11(3). <https://doi.org/10.26740/Bioedu.V11n3.P643-661>

- Santosa, S., & Badawi, J. A. (2022). Analisis Butir Soal Pilihan Ganda Tema Pertumbuhan Dan Perkembangan Makhluk Hidup Kelas Iii Madrasah Ibtidaiyah. *Jurnal Basicedu*, 6(2). <https://doi.org/10.31004/basicedu.v6i2.2206>
- Saputra, H. D., Purwanto, W., Setiawan, D., Fernandez, D., & Putra, R. (2022). Hasil Belajar Mahasiswa: Analisis Butir Soal Tes. *Edukasi: Jurnal Pendidikan*, 20(1). <https://doi.org/10.31571/edukasi.v20i1.3432>
- Sari, R. P. (2022). Analisis Butir Soal Ujian Akhir Semester Genap Mata Pelajaran Matematika Kelas Xi Smk Negeri 1 Percut Sei Tuan T.A. 2019/2020. *Jurnal Penelitian Pendidikan Mipa*, 7(1). <https://doi.org/10.32696/jp2mipa.v7i1.1360>
- Sari, V. N. I., Utomo, A. P. Y., & Sumarwati. (2022). Kualitas Soal Bahasa Indonesia Di Smp Muhammadiyah 1 Pontianak: Analisis Butir Soal Vina. *Jurnal Pendidikan Bahasa Dan Sastra Indonesia*, 11(2).
- Siskawati, F. S., Suci Qurrota A'yun, A. A., & Irawati, T. N. (2022). Analisis Kelayakan Butir Soal Pada Media Intermathly (Interesting Mathematic Monopoly). *Jurnal Cendekia : Jurnal Pendidikan Matematika*, 6(1). <https://doi.org/10.31004/cendekia.v6i1.1181>
- Subando, J., Faridatul Ulfah, Y., & Mulyani, S. (2022). Pelatihan Penyusunan Dan Analisis Butir Soal Di Mahad Al Husnayain Surakarta. *Al Haziq: Journal Of Community Service*. <https://doi.org/10.54090/haziq.79>
- Verawati, Y., Siskawati, F. S., & Susilaningtyas, T. (2023). Analisis Butir Soal Ujian Akhir Semester (Uas) Mata Pelajaran Matematika Pada Tahun Ajaran 2020/2021 Kelas Vii Smp Islam At Tanwir Kecamatan Ledokombo Kabupaten Jember. *Jurnal Jendela Pendidikan*, 3(01). <https://doi.org/10.57008/jjp.v3i01.422>
- Wulandari, T., Ramli*, M., & Muzzazinah, M. (2022). Analisis Butir Soal Dynamic Assessment Untuk Mengukur Pemahaman Konsep Klasifikasi Tumbuhan Pada Mahasiswa. *Jurnal Pendidikan Sains Indonesia*, 10(1). <https://doi.org/10.24815/jpsi.v10i1.22082>
- Yudhanto, Y. (2022). Rancang Bangun Aplikasi Exam Dengan Metode Analisis Butir Soal. *Indonesian Journal Of Applied Informatics*, 5(2). <https://doi.org/10.20961/ijai.v5i2.43505>