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Meta-analysis of Hots Science Daily Grade VIII SMP Negeri 7 Kerinci Lesson Year 2020/2021

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Abstract

The purpose of this research is to find out the meta-analysis of the Integrated Science Subjects Class VIII SMP Negeri 7 Kerinci Year 2020/2021 which is reviewed from validity, reliability, differentiation and difficulty level. This research is quantitative research with descriptive method. The subjects in this study were all students of grade VIII SMP Negeri 7 Kerinci Year 2020/2021 which amounted to 50 students and objects in this study are questions and key answers to the hots of Integrated Science Subjects Class VIII SMP Negeri 7 Kerinci Year 2020/2021 which consists of 20 multiple choice questions. The data collection method used is the documentation method. Data analysis is performed using the help of SPSS Version 24.0 and Microsoft Excel programs. From the results of the study, it can be concluded that the meta-analysis of valid hots questions amounted to 11 questions with a percentage of 55 % at number 1,2,3,4,7,9,10,11,14,16,19 with criteria $r_{count} \geq 0.2787$, while the invalid question amounts to 9 questions with a percentage of 45 % at the number 5,6,8,12,13,15,17,18,20 with criteria $r_{count} < 0.2787$. The meta-analytical reliability of the Hots Problem Integrated SCIENCE Subjects has a Value of Cronbach's Alpha or r_{11} of 0.70 and is adjusted to the reliability criteria indicating that the question has high reliability. On the differentiation of the problem that is classified as good as 45% of the 20 points of multiple-choice questions because it can distinguish high group learners with low-group learners. The question item used is a question that has good differentiation or the proportion of the problem dermination index in a high category. And the problem difficulty index includes a good question because the question is classified as being larger than the problem that is classified as difficult, namely from 20 points of multiple-choice questions there are 13 questions (65%) relatively easy.

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INTRODUCTION

Learning is a combination that is composed of human elements, material means, obtaining data either directly or indirectly through the media or others. The learning process is a system consisting of several components that are always related and related in achieving learning objectives. (Virginia et al., 2021) The purpose of this learning is to disseminate knowledge data to the appropriate public and need the data (Akbar et al., n.d.) The achievement of the learning objectives of one of the science subjects is to improve the expertise of investigating nature, dismantling problems, and making decisions requiring appropriate learning models / procedures (Depdiknas, 2013).

Meta-analysis of the problem is one of the obligations for each teacher, it is said to be an obligation because each teacher must basically be able to share data with his institution and to his own students about how and how far the skills and skills that have been achieved by students to the learning and skills that have been given. Until Evaluation of learning is the process of collecting and processing data to measure the achievement of learners' learning outcomes and to measure the achievement of learning outcomes, one of which is by the work of Daily Deuteronomy (Gasela et al., 2020).

Learning evaluation is a process to ensure the value of learning and learning carried out, through evaluation activities or measurement of learning and learning . (Sucita et al., 2020) Evaluation activities or assessments that are tried include process assessment and evaluation of results. (Edi Purnomo., 2016) Evaluation aims to measure the understanding and mastery of concepts of the materials that have been studied by students, improving and improving the quality of the learning process carried out. (Huda & Wahyuni, 2020) By conducting a good evaluation system is expected to be a benchmark to know the ability of students and the quality of actual education. Evaluation is done to collect students' learning outcomes. This can be done to measure students cognitive learning outcomes with regard to the mastery of teaching materials in accordance with the educational objectives and lessons that have been learned that day (Wijaya et al., 2019).

In obtaining the results of the assessment in learning, can be tried by 2 methods, namely test methods as well as non-tests. Test is a method that can be used or procedures used in the framework of measurement and evaluation in the field of learning, in the form of assignments or a series of tasks either in the form of questions that must be answered, or orders that must be done by the testee (Sudijono, 2015: 67). According to Sukiman (2012: 7) The test is an official evaluation instrument used to take into account the cognitive skills of learners in a subject. To recognize the quality of a test, until the need for an educator or teacher to carry out an analysis of the question item to be given to the learner, so that the results of a test can describe the true state of a student after exploring the learning process of a lesson that has been given by an educator or teacher. One of the activities to get the results of the assessment of learning by test method, with the holding of Daily Deuteronomy which is an evaluation activity carried out at the end of the lesson with the learning taught that day. (Setyariningsih, 2020)

Based on the results of an interview with one of the teachers of integrated science subjects' grade VIII SMP Negeri 7 Kerinci, so far, science subject teachers have never meta-analyzed hots on the questions made, so the quality of the question is not yet known because the teacher does not know and the teacher does not know how or techniques to analyze the question item. Science teachers usually only conduct evaluations related to Daily Deuteronomy conducted by simply looking at how complete the students who achieved the kkm have been determined. Usually, teachers make a grid of hots questions for the making of assessment questions to be used, but this time the teacher has not created a grid of questions related to the Daily Deuteronomy problem with the type of hots question because of one thing or another. Even so, the question made by science teachers still refers to KD in the syllabus that has been given.

RESEARCH METHOD

This type of research is descriptive quantitative research which means that this research is conducted quantitatively but not to accept or reject hypotheses, but rather a study that is shown to describe phenomena as they are against the objects studied. Descriptive research is used to collect data to determine the objects studied. This study describes the state of the object that is studied as it is in this case, namely the criteria of The Daily Test Hots of Integrated Science Subjects Class VIII SMP Negeri 7

Kerinci Year 2020/2021 including good or less well researched quantitatively (validity, reliability, differentiation and difficulty level). The sample in this study is data obtained in the form of student answer sheets from teachers of SMP Negeri 7 Kerinci. The answer sheet will then be tabulated for each selection of answers the learner answers. Each item of the question answered correctly by the learner is given a score (1) and vice versa if the student's answer is wrongly scored (0). In this study, the data in the form of numbers will be analyzed using SPSS Version 24.0 and Microsoft Excel programs.

RESULTS AND DISCUSSION

The results obtained from the Meta-analysis of Hots Science daily ipa Grade VIII SMP Negeri 7 Kerinci Lesson Year 2020/2021 are reviewed from the following aspects:

1. Validity

Validity is calculated by using the product moment correlation formula r_{xy} . The number of students of grade VIII SMP Negeri 7 Kerinci consists of class VIII consisting of class VIII A, VIII B, and VIII C is 50 people. Based on the number of research subjects that is 77 people and looked at the significance of 5% n-2 out of 50 people is 48 people, so obtained r-table figure of 0.2787. The distribution of 20 question items based on validity is as follows:

Table. 1 Distribution of Problem Items Based on Validity

| No | Validity Index | Question item | Amount | Percentage |
|----|---|----------------------------|--------|------------|
| 1 | $r_{hitung} \geq 0,2787$ (Valid Problem) | 1,2,3,4,7,9,10,11,14,16,19 | 11 | 55 % |
| 2 | $r_{hitung} < 0,2787$ (Invalid Problem) | 5,6,8,12,13,15,17,18,20 | 9 | 45 % |

Meta-analysis of Hots Science daily IPA Grade subjects of Integrated Science Class VIII showed that among the 20 questions in the form of multiple choice, valid question items amounted to 11 questions with a percentage of 55 % at number 1,2,3,4,7,9,10,11,14,16,19 with criteria ≥ 0.2787 , while the invalid question amounts to 9 questions with a percentage of 45 % at the number 5,6,8,12,13,15,17,18,20 with criteria < 0.2787 .

The same was also revealed by Maisari, et al (2020) Validity test results show logically valid questions with an average value of 3.27 with valid criteria. The average value of the practicality of 98.61% with the criteria of the question is very practical, the reliability of the problem is 0.85, and the difficulty level of the question between 0.29 to 0.67 with the medium criteria, as well as the question has good different power and good quality of question options. (Maisari et al., 2020)

Based on the previous description, it can be concluded that the question of Hots Science daily IPA Grade VIII SMP Negeri 7 Kerinci Lesson Year 2020/2021 is classified as a quality question, judging by the results of analysis of question items that show that valid questions are more than invalid questions. Valid question items should be included in the question bank so that they can be reused in future tests. Invalid question items are either discarded or not reused.

2. Reliability

Results of reliability Meta-analysis of Hots Science daily ipa Grade VIII SMP Negeri 7 Kerinci Lesson Year 2020/2021 obtainet that *Cronbach's Alpha* atau r_{11} of 0,70 with High Reliability category.

The results of the meta-analysis are adjusted to the theory that if the > 0.70 then it has high

reliability and vice versa $\alpha < 0.70$ then it has low reliability. It is known that the problem has a value of Cronbach's Alpha or 0.70 and is adjusted to the reliability criteria indicating that the problem has high reliability. (Muluki, 2020) showed that the quality of tests based on validity, valid questions amounted to 14 questions or 70%, test quality based on reliability, it can be concluded that the item of the test of the odd semester of natural science subjects class IV MI Radhiatul Adawiyah Makassar school year 2018/2019 has a high reliability coefficient of 0.70.

3. Different power

Based on the results of the Meta-analysis of Hots Science daily ipa Grade VIII SMP Negeri 7 Kerinci Lesson Year 2020/2021, The distribution of 20 points of questions based on differentiation as follows:

Table. 3 Distribution of Problem Items Based on Differentiation

| No | Different power | Question item | Amount | Percentage |
|----|----------------------------|-----------------------|--------|------------|
| 1 | - (not good) | 17 | 1 | 5 % |
| 2 | < 0,20 (Ugly) | 15 | 1 | 5 % |
| 3 | 0,20 – 0,40 (Enough) | 5,6,7,8,13,14,18,19 | 8 | 40 % |
| 4 | 0,41 – 0,70 (good)) | 1,2,3,4,9,10,11,12,20 | 9 | 45 % |
| 5 | 0,71 – 1,00 (very good) | 16 | 1 | 5 % |

The results of the meta-analysis of the distinguishing power of the question item with the number of 20 questions in the form of multiple choice is known that the Meta-analysis of Hots Science daily ipa Grade VIII SMP Negeri 7 Kerinci Lesson Year 2020/2021 shows that the item of the question that has a differentiation power is not good 5 % in the point of question number 17 with the criteria of the value of differentiation is marked negative (-), the item of the question is classified 1 question item with a percentage of 5 % in question point number 15 with the criteria of differentiation value (< 0.20), the question item is classified as enough as 8 with a percentage of 40 % in the question item number 5,6,7,8,13,14,14,. 18.19 with the criteria of distinguishing power value between (0.20 – 0.40), a question item that is classified as good as 9 points of question with a percentage of 45 % in question point number 1,2,3,4,9,10,11,1 2.20 with the criteria of distinguishing power value between (0.41 – 0.70) and a question item that is very good as much as 1 question item with a percentage of 5 % in question point number 16 with the criteria of differentiating value between (0.71 – 1.00).

Iswatul Hasanah (2014) Judging by the different power, 2.5% has a very bad different power, 15% has a bad different power, 32.5% has enough different power and 50% has good different power. Judging from the effectiveness of the casting 42.5% have a well-functioning casting and 57.5% are unable to perform their functions properly. (Hasanah et al., 2014)

Based on the description, it can be concluded that the question Meta-analysis of Hots Science daily ipa Grade VIII SMP Negeri 7 Kerinci Lesson Year 2020/2021 which is classified as a good question as much as 45% of 20 points of multiple-choice questions because it can distinguish high group learners with low-group learners. The question item used is a question that has good differentiation power or the proportion of the problem derimination index in a high category

4. Difficulty index

Based on the results of the Meta-analysis of Hots Science daily ipa Grade VIII SMP Negeri 7 Kerinci Lesson Year 2020/2021, the distribution of 20 points of questions based on difficulty levels are as follows:

Table 4. Distribution of Problem Items by Difficulty Level

| No | Difficulty index | Question item | Amount | Percentage |
|----|----------------------------|----------------------------------|--------|------------|
| 1 | 0,00 – 0,30 (Difficult) | 3,5,7,13,14,15,18 | 7 | 35 % |
| 2 | 0,31 – 0,70 (Are) | 1,2,4,6,8,9,10,11,12,16,17,19,20 | 13 | 65 % |
| 3 | 0,71 – 1,00 (Easy) | - | 0 | 0 % |

The results of the Meta-analysis of Hots Science daily ipa Grade VIII SMP Negeri 7 Kerinci Lesson Year 2020/2021 a question item that is considered difficult as much as 7 points of questions with a percentage of 35% on question point number 3,5,7,13,14,15,18 with the criteria of difficulty level between (0.00 – 0.30), the item of the question that is classified as moderate as much as 13 question items with a percentage of 65 % in question items number 1,2,4,6,8,9,10,11,12,16,17,19,1 20 with the criteria of difficulty between (0.31 – 0.70), and there is no problem item that is relatively easy with the criteria of difficulty level between (0.71 – 1.00).

The same is also revealed by Rulin Sumarda (2020) can be known that from 35 points of questions that belong to the difficult category of 5 questions (14%), moderate category questions as many as 18 points (52%) and easy categorized questions as many as 12 items (34%). Judging from the different power of the problem, it can be categorized quite (moderately). This can also be seen from the analysis of 35 questions, there are 8 points of categorized questions very well (23%) including good category, 10 questions (29%) 17 questions (49%) are classified as enough categories and 0 questions (0%) classified as not good. (Sumarda, 2020).

Based on the description, it can be Meta-analysis of Hots Science daily ipa Grade VIII SMP Negeri 7 Kerinci Lesson Year 2020/2021 is a good question because the question is classified as being larger than the question that is classified as difficult, namely from 20 points of multiple-choice questions there are 13 questions (65%) relatively easy.

CONCLUSION

From the results of the research Meta-analysis of Hots Science daily in Grade VIII SMP Negeri 7 Kerinci Lesson Year 2020/2021 can be concluded that, the problem used by teachers in uh can be said with high quality. This is proven to be a lot of valid questions, high reliability, good competitiveness and moderate difficulty index.

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