

Need Analysis of Mathematics Learning in 8th Grade Junior High School Palembang

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Info Articles

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Abstract

Mathematics is the subject matter that is most difficult by most students. In this study, researchers analyzed students' learning needs to find out what media or learning materials are appropriate for students to learn mathematics class VIII Junior High School 41 Palembang. The data collection techniques used include: 1) questionnaires, knowing the needs of students in the mathematics learning process: 2) observations, knowing the conditions and problems in mathematics learning: 3) interviews with teachers and students. The data analysis technique used is descriptive analysis with data reduction, data presentation, conclusion drawing, and verification. The results of the analysis show that students choose interesting learning media-based learning style, media, internet, and smartphone

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INTRODUCTION

According to Fatqurhohman (2014, 132), misconceptions of mathematical concepts occur because the teaching and learning process is only limited to discussing the material being studied without instilling mathematical concepts in depth. Then according to Gazali (2016), mathematical misconceptions in students are also caused by the learning applied so far, which is directed a lot to the process of memorizing the information presented by the teacher. In addition, the method used by the teacher in delivering the material is only lectures and without the use of media (Hamalik 2012). Based on the statements above, misconceptions of mathematical concepts in students can be caused because the learning process is less active and the student's experience in understanding mathematical concepts is less profound.

Furthermore, based on the results of observations made, the teaching materials used by teachers and students in the learning process in class are in the form of Student Worksheets (LKS) and other supporting books provided by the school. In general, the LKS used is not interactive because communication is only one-way and the LKS structure only contains a summary of the material, a collection of formulas, sample questions, and practice questions. This pattern gives students a narrow view of the mathematics subject matter because the material, sample questions, and practice questions presented are said to lack explanation. This causes students to lack understanding of concepts and difficulty in solving problems with the material taught. In addition, the LKS used today has not emphasized the understanding of concepts, is not visual, display and there is no variation in the color of the images presented in the LKS, resulting in students finding it difficult to understand material that has image elements.

In addition, students are facilitated in learning the material of a lesson now is learning that involves technology. Technology that is visual, can move, has sound and can involve students in the process. In addition, most school-age children love learning through interactive teaching materials and technology-based social media. Through Government Regulation Number 19 of 2005 article 19 paragraph 1, in learning it is hoped that educators can use methods and media that are able to actively involve students and create a fun, interesting, and interactive atmosphere that is adjusted to the stage of development of thinking, characteristics and learning conditions of students. This condition is also very necessary in mathematics learning in junior high school.

Based on the data above, an innovation in learning is needed that can be used to realize this goal, a teacher must have skills in choosing, using methods and making new innovations in creating an effective and efficient learning environment for students. The use of good learning methods will affect the learning process in the classroom to be good too and students will be more enthusiastic in learning. Innovation can integrate today's educational information technology by designing digital learning activities and applying technological tools flexibly (Haryanto, 2015). The choice of learning methods will affect the type of media that will be used by educators, including teaching materials in the form of digital teaching materials. The use of digital technology in learning can increase the length of learning time and can improve learning performance (Sungkono, 2009). Thus, by applying information technology today, it facilitates the learning process. Based on these descriptions, it is known that teachers need learning media that is fun, integrated with technology, and easily accessible to students. However, the media must still make the material conveyed properly, in accordance with the goals to be achieved and increase learning motivation in students. Therefore, research is needed to develop digital teaching materials in mathematics subjects Class VIII at Junior High School 41 Palembang.

METHODS

Research is carried out with a descriptive qualitative research approach. The presence of researchers in the study is through field observation, interviews with related teachers, and the dissemination of questionnaires to students. The research location used to collect research data is Junior High School 41 Palembang. An interview was conducted with Triyani Agustina as a mathematics teacher and 32 students in class VIII-7. Data collection techniques are used, including: 1) questionnaire, knowing the needs of learners in the mathematics learning process: 2) In mathematics learning, observation, knowledge of conditions, and problems: 3) In-depth interviews with teachers and students. The data analysis techniques used are descriptive analysis with data reduction, data presentation, conclusion drawing, and verification.

RESULTS AND DISCUSSIONS

Learner Scope Analysis

Researchers analyzed the scope of students using *googleform* against class VIII-7 learners at Junior High School 41 Palembang. The results of the scope analysis of learners can be seen as follows.

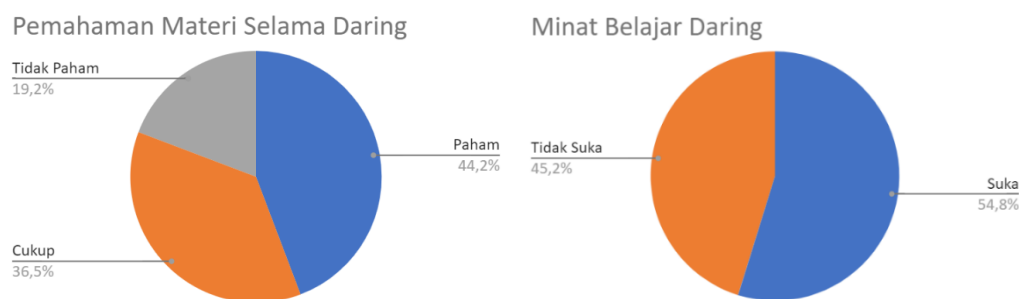


Figure 1. Scope of learners

Based on the data in the image above it is known that students with a total of 19,2% still have difficulty, 36,5% enough and 44,2% understanding the mathematics lesson in online learning. Students' interest in learning online is that more people like to learn online, which is 54.8%. Based on the results on the google form, most students already understand mathematics learning this semester, but almost half of the students like online learning patterns because online is more effective and uses a lot of gadgets.

Then, in addition to students' interest and understanding of learning, it can be seen the availability of personal devices for students of SMP Negeri 41 Palembang. Students also have adequate media as a medium for learning at home or at school. The readiness of students to learn is as shown below:

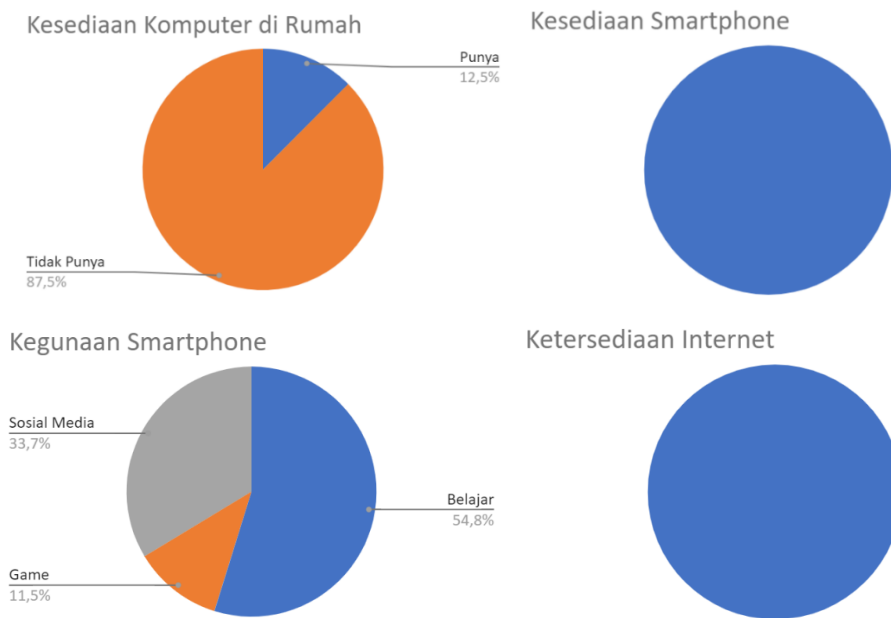


Figure 2. Analysis of learner characteristics

Based on the chart above, it can be seen that most of the students of SMP Negeri 41 Palembang have smartphones and computers or laptops, which are 100% have smartphones and the internet. Furthermore, 87.5% have a computer in their respective homes. With the use of smartphones, the distribution of students' cellphone use is very diverse, namely 33.7% for social media, 11.5% for games, even 54.8% used for learning. Of course, the presence of students with smartphones, the internet, and computers will make it easier for students to find other additional learning resources besides only material from books or those given by teachers. So, students can learn with a variety of interactive media that suit the learning style, visual display and audio-visual, so as to achieve an independent learning style and will easily apply the curriculum in accordance with educational goals.

Analyzing School Facilities and Infrastructure

The results of the analysis of facilities and infrastructure can be seen in the following table:

Table 1. Junior High School 41 Palembang School Facilities

No.	Facilities Infrastructure	Exists/None	Information
1	Laboratorium Computer	Exist	5 x 6 m
2	Webcam	Exist	17 pcs
3	Computer/Laptop	Exist	17 computer and 10 laptops
4	Internet	Exist	Connected
5	LCD and Projector	Exist	Available
6	Website/Instagram/Tik Tok	Exist	https://smpnegeri41palembang.sch.id/

Based on the table above, the use of school facilities that are already very complete is very supportive of the learning process of students in schools. The facilities that can be used are computer laboratories, webcams, computers, laptops, internet, LCD, projectors, and we even school people can search for school profiles on websites and Instagram. Students can compete for learning in the form of technology. Moreover, schools now with an independent curriculum have

informatics lessons. This is very necessary and useful so that students become more accustomed and easily recognize learning devices that can be used for free in schools.

Mathematics Subject Educator Scope Analysis

Based on the results of the needs analysis at Junior High School 41 Palembang, researchers obtained some information that supports the selection of learning media and materials developed in mathematics learning from study source, tools, and learning methods. Some of the findings of the analysis are as follows.

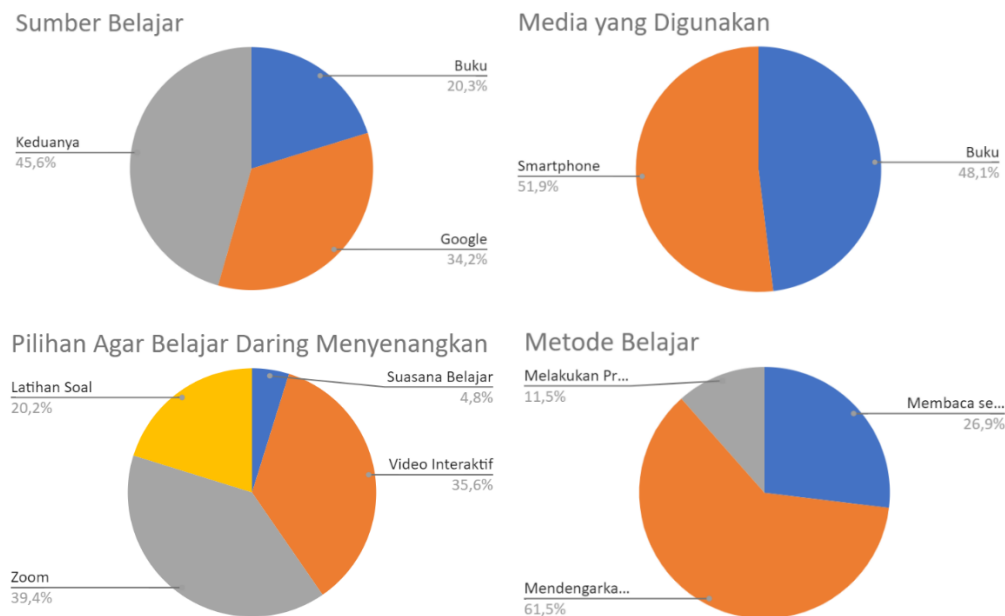


Figure 3. Analysis of Mathematics Subject Educator

Based on the chart above, students learn more through books and google, which is 45.6%. In addition to books and google, students also find it easier to get information through Youtube using smartphones. Smartphone usage in students searching for information was 51.9%. Then the learning option that students find interesting is to use zoom (white board) and interactive video of 35.6%. After the student's characteristic in choosing learning resources, the learning style of students in the classroom is the most audiovisual (listening) as much as 61.5%, visual (reading) as much as 26.9%, and kinesthetic (physical activities) is 11.5%. Thus, with the characteristics and learning styles of these students, appropriate media and teaching materials are needed to cover everything.

Broadly speaking throughout the interview, the mathematics teacher, Triyani, stated that:

"The level of understanding of mathematics for students at SMP Negeri 41 Palembang is good, but good for repeated questions, if given AKM questions that concern daily life, students will have difficulty solving problems. With this difficulty, some students' mathematics scores are below the minimum competency ability standard (KKM). However, if several times students are given questions in the form of games and interactive videos in the form of visual images, students seem more interested and interested in solving mathematical problems".

Based on the above analysis, it allows students to lack understanding of the material about the mathematics process. Educators need a proper solution in the form of learning media that can visualize math concepts. The learning media needed must be in accordance with the needs and

characteristics of learners so that they can help students in improve their learning outcomes with technology skill.

CONCLUSIONS

The conclusion of the above needs analysis is based on the analysis of student learning characteristics, the characteristics of mathematics teachers, to the availability of learning facilities in schools. Through these three subjects of analysis, it is obtained to improve the quality of the learning process and outcomes through the balance between media and student teaching materials in accordance with the needs of current learning objectives. Nowadays, students prefer to study fun using smartphones, the internet, and other sources besides printed books from school. Sources from the internet can be additional information for students' learning. In addition, the media or teaching materials used by teachers other than books can adjust all student learning styles. With interactive learning media, it is hoped that it can help students develop skills in the field of mathematics.

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