

Perceptions of Students on Differentiated Learning of Video Content in Long Multiplication Mathematics Lessons

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Abstract: Currently, students often feel bored with the teaching and learning activities in the classroom, especially in Mathematics learning, for that a learning style approach is needed that is adjusted to the needs of each student. The purpose of studying content differentiation through videos for elementary school children is to provide a more meaningful learning experience and in accordance with the needs and learning styles of each student, facilitate diverse learning styles and provide an interactive learning experience. By using visual and auditory content videos, learning for grade 3 elementary school children greatly helps students understand the material to be studied; after watching the video, the teacher can interact directly with students through questions or quizzes based on the learning videos that have been watched by students. The method used in this study is qualitative, where this approach focuses on an in-depth understanding of socio-cultural phenomena and human behavior through non-numerical data. Qualitative research emphasizes the context of the process and quality rather than measurement. In this study, video content differentiation is a strategy where creators and content providers provide a variety of learning styles to students.

Keywords: Long Multiplication, Math Lessons, Video Content Differentiation

A. Introduction

Teachers are educators for students. Teachers not only educate in lessons, but teachers also educate morals and character to students. Teachers have a very great sense of responsibility towards students. Teachers need to have a high commitment because with a high commitment, the quality of learning services, which are the main task of a teacher, will be achieved optimally in forming better student character (Siddique et al., 2022). There are many problems that teachers have with students, especially in providing mathematics learning for grade 3 of SD Negeri 143 Palembang; teachers are always looking for strategies or teaching styles that are easy for students to understand. Education that sides with students makes students the main priority that must be facilitated (Sjølie et al., 2021). In implementing differentiated learning, there are three types of approaches that can be used, namely

content differentiation, process differentiation, and product differentiation. In the content differentiation approach, the teacher prepares what is taught according to the needs of the students. The teacher differentiates the material taught based on the results of the learning needs mapping that has been carried out. In the process differentiation approach, teachers design ways for students to understand and interpret what is learned through various activities. In the product differentiation approach, teachers can provide students with choices in completing their work so that it can be assessed and evaluated (Gheysens et al., 2022).

Cognitive and psychomotor learning abilities in mathematics lessons are very influential; if students' effective attitudes are shallow in learning, then learning outcomes will not be optimal. Awareness of student perceptions and effective responses to assessments are very important (Van der Kleij & Lipnevich, 2021). Previously, I had data in delivering long multiplication learning materials by providing an initial assessment for students, providing several questions using a Google document form of six questions, which were used as a reference to follow up on how difficult it was for students to learn long multiplication mathematics. I gave an initial test (Initial Assessment) when starting long multiplication learning by memorizing the multiplications 1-5 first. I called students one by one to the front of the class to find out whether students had memorized the multiplications 1-5. And it turned out that there were some students who had not memorized the multiplication. Then there were some students who had less interest in carrying out Mathematics learning, and then I showed a Mathematics learning video related to long multiplication.

B. Methods

This research was conducted at SD Negeri 143 Palembang. The facilities needed during the research are a laptop, a projector, and a Wi-Fi/internet quota. The research time was during mathematics class hours. The research was taken in several cycles. According to Moleong (2016), qualitative research can be defined as a strategy for finding meaning, understanding, concepts, characteristics, symptoms, or symbols of phenomena; focusing on multi-method, natural, and holistic approaches; and prioritizing the quality of several methods and presented narratively in scientific research. This study uses a qualitative research method based on theories. This study uses a descriptive analysis approach that was previously read first. Data sources were collected through literature study techniques from various sources, including journals, articles, and theses that are in line with and related to the title chosen by us.

C. Results and Discussion

In its stages, this study uses analysis techniques by reading data, which is then discussed and then concluded. The first cycle is that I takes one question to explore

or describe and finds difficulty in placing numbers in the correct column, based on six questions via the Google document form that has been given to grade 3 students. Learning difficulties experienced by students if left alone will have worse consequences for students. Because it will make them less interested in learning mathematics, more confused with the next materials in mathematics, and bored when learning takes place, they will increasingly assume that mathematics is scary. Therefore, learning difficulties in students must be identified early on so that the above things do not happen in the future; difficulties learning will be seen since elementary school (Schmitterer & Brod, 2021). From the results of the research data, it can be seen that most students have difficulty in the tens and units columns. The solution is to increase practice with direct assistance, using teaching aids or video methods, and clearer visuals related to the concept of multiplication place values.

The second cycle is that I call students one by one to the front of the class to find out their ability to memorize multiplication. Data shows that multiplication by five is a challenge for most students. Some students have mastered multiplication by one to three but still need reinforcement in multiplication by four and five. Students who have mastered all multiplication by one to five can be involved in helping their friends or given further challenges. The solution that can be done is to do repeated exercises and games to make the memorization process more fun, for example, using the singing method, which is a learning method that uses sung poems. The poems are adjusted to the materials taught by the educator. According to several experts, singing makes the learning atmosphere cheerful and exciting so that children's development can be stimulated more optimally (Assalamah, 2024). In addition, we can use visual methods such as multiplication tables and interactive practice to help students who have difficulty and use the lattice method, such as column label graphs.

The third cycle of students who have a lack of interest in implementing long multiplication learning. The main factor in the lack of interest is difficulty in understanding the concept. Internal factors that come from the students themselves are the cause of difficulties in learning multiplication operations. Internal factors that are the cause are interest, attention, relationships, or relationships, while external factors that cause learning difficulties are students whose parents work or live more with their grandmothers (Hrabéczy et al., 2023). Conceptual understanding is the ability to behave, think, and act shown by students in understanding the definition, understanding of special characteristics, nature, and core or content of mathematics, or the ability to choose the right procedure in solving problems (Que et al., 2022). The problem of lack of motivation, inappropriate teaching methods, and lack of application of mathematics in everyday life can be overcome with a personal approach and the use of interactive Microsoft PowerPoint media that helps organize material easily and effectively during presentations (Budianti et al., 2023). To

increase student interest in learning mathematics, additional guidance can be provided, and mathematics can be linked to everyday applications.

Students' reactions to long multiplication learning videos can vary depending on factors such as their learning style, interest in the material, and how the video is delivered. Here are some common reactions that may occur:

1. **Enthusiasm and interest**
Many students will be interested in the visualization presented in the video. They are more focused and interested because the material taught in a different way than the usual learning approach is updated by using visualization through videos and images. This activity includes group discussions, making diagrams or posters using images, and explaining the material through videos (Simamora, 2024). The attractive animation and color display can trigger their interest.
2. **Increased understanding**
Students who previously had difficulty with the concept of multiplication, Concepts in mathematics are abstract ideas that allow us to group objects into examples or non-examples of that abstract idea. A concept is limited by an expression called a definition. In the multiplication of whole numbers using a long method, there are two concepts that apply, namely: a. the concept of place value, and b. multiplication concept with long arrangement may show a positive reaction with the learning video.
3. **Increased interaction**
Interactive videos, or those that include challenges and exercises, will encourage students to participate actively. They can ask questions, try to solve problems, or discuss with friends what they learned from the video.
4. **Confusion or lack of understanding**
Some students may feel confused if the explanation in the video is too fast or they do not fully understand the basic concept. This reaction is usually shown with a confused face, silence, or less activity during the discussion.
5. **Intrigued or repeating**
Some students show a desire to watch the video again, especially those who need to repeat the steps.
6. **Discussion and collaboration**
Younger students may understand that they will help their friends who are having difficulty. According to Sailer et al. (2021), learning is a process of interaction between teachers and students that involves the transfer of knowledge, skills, attitudes, and understanding from teachers to students. The learning process includes providing materials, organizing learning activities, and assessing student learning outcomes.
7. **Losing focus**
Not all students have the same interests; it is possible that students will feel bored or lose focus if the video is too long or does not match their interests.

Mathematics lessons for 3rd-grade elementary school students are very important in introducing calculations, especially in long multiplication. 3rd-grade elementary school mathematics is designed to strengthen the basics of mathematics that have been learned in previous grades and introduce more challenging concepts. The main focus is on arithmetic skills. Learning needs are the distance or gap between the learning targets to be achieved and the current real conditions of students. There are three factors that influence learning needs, namely knowledge, skills, and student interest (enthusiasm). Differentiated content learning is carried out by providing varied learning materials according to the students' understanding. The purpose of differentiation is so that each student can achieve the expected learning objectives. The characteristics of video teaching media are that students prefer them because they can be presented in an interesting way, are easy to understand because they are presented combining images, sound, and text, and can be a bright substitute for teachers. Long multiplication for 3rd-grade elementary school is a method for multiplying two numbers by arranging the numbers in a vertical form and calculating the results step by step from units, tens, to hundreds. This helps children develop a deep understanding of the multiplication process systematically. There is one journal article according to researchers that is less efficient in the concept of understanding lack of interest in learning external factors, namely the cause of learning difficulties in students whose parents are left to work, living with their grandmothers (Dwiyono & Tasik, 2021).

D. Conclusions

Overall, students tend to have a positive perception of mathematics learning using content differentiation videos, especially if the videos are designed to be interesting, interactive, and appropriate to the individual needs of students. However, the success of this learning also depends heavily on the readiness of technology and students' access to adequate supporting devices.

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References

- Budianti, Y., Rikmasari, R., & Oktaviani, D. A. (2023). The Use of Interactive Powerpoint Media to Improve Elementary School Students' Learning Outcomes. *Jurnal Inovasi Pendidikan dan Pembelajaran Sekolah Dasar*, 7(1), 127. <https://doi.org/10.24036/jippsd.v7i1>
- Dwiyono, Y., & Tasik, H. K. (2021). Analysis of Learning Difficulties in Multiplication Arithmetic Operations in Mathematics of Grade IV Students of

- Elementary School 019 Samarinda Ulu. *Jurnal Ilmu Pendidikan LPMP Kalimantan Timur*, 1, 1-15.
- Gheysens, E., Coubergs, C., Griful-Freixenet, J., Engels, N., & Struyven, K. (2022). Differentiated Instruction: The Diversity of Teachers' Philosophy and Praxis to Adapt Teaching to Students' Interests, Readiness and Learning Profiles. *International Journal of Inclusive Education*, 26(14), 1383-1400. <https://doi.org/10.1080/13603116.2020.1812739>
- Hermanto Simamora. (2024). Improving Student Learning Outcomes with the Help of Video and Image Visualization Using the Problem Based Learning Model at Cinta Rakyat 1 Private Middle School, Pematangsiantar. *Prosiding Seminar Nasional Pendidikan dan Agama*, 5(2), 1030-1048. <https://doi.org/10.55606/semnasp.v5i2.2171>
- Hrabéczy, A., Ceglédi, T., Bacskai, K., & Pusztai, G. (2023). How can Social Capital Become a Facilitator of Inclusion? *Education Sciences*, 13(2), 109. <https://doi.org/10.3390/educsci13020109>
- Moleong, L. J. (2016). *Qualitative Research Methodology*. Remaja Rosda Karya.
- Que, B. J., Kusnadi, I. H., Silalahi, R. M. P., Rahman, A. A., & Kurniawan, A. (2022). The Effect of Deep Dialogue/Critical Thinking Model on Students'™ Conceptual Understanding Ability. *Journal of Innovation in Educational and Cultural Research*, 3(3), 422-431. <https://doi.org/10.46843/jiecr.v3i3.130>
- Sailer, M., Schultz-Pernice, F., & Fischer, F. (2021). Contextual Facilitators for Learning Activities Involving Technology in Higher Education: The C b -Model. *Computers in Human Behavior*, 121, 106794. <https://doi.org/10.1016/j.chb.2021.106794>
- Schmitterer, A. M. A., & Brod, G. (2021). Which Data Do Elementary School Teachers Use to Determine Reading Difficulties in Their Students? *Journal of Learning Disabilities*, 54(5), 349-364. <https://doi.org/10.1177/0022219420981990>
- Siddique, Z.-H., Hussain, S., Ahmad, M. S., & Hussain, S. (2022). Relationship of Teacher-Student Interaction, Learning Commitment and Student Learning Comfort at Secondary Level. *International Research Journal of Education and Innovation*, 3(2), 156-169. [https://doi.org/10.53575/irjei.v3.02\(22\)17.156-169](https://doi.org/10.53575/irjei.v3.02(22)17.156-169)
- Sjølie, E., Strømme, A., & Boks-Vlemmix, J. (2021). Team-skills Training and Real-Time Facilitation as a Means for Developing Student Teachers' Learning of Collaboration. *Teaching and Teacher Education*, 107, 103477. <https://doi.org/10.1016/j.tate.2021.103477>
- Tuhfatul Mubarakah Assalamah. (2024). Enhancing English Learning for Elementary Students through Children's Songs. *Sintaksis: Publikasi Para Ahli Bahasa dan Sastra Inggris*, 2(4), 319-334. <https://doi.org/10.61132/sintaksis.v2i4.957>
- Van der Kleij, F. M., & Lipnevich, A. A. (2021). Student Perceptions of Assessment Feedback: A Critical Scoping Review and Call For Research. *Educational Assessment, Evaluation and Accountability*, 33(2), 345-373. <https://doi.org/10.1007/s11092-020-09331-x>