ISSN 2087-8885
E-ISSN 2407-0610

Journal on Mathematics Education
Volume 10, No. 1, January 2019, pp. 127-142

LEARNING OF DIVISION OPERATION FOR MENTAL RETARDATIONS' STUDENT THROUGH MATH GASING

Laila Fatika Nuari[1], Rully Charitas Indra Prahmana[1], Irma Fatmawati[2]

[1]Universitas Ahmad Dahlan, Jl. Pramuka 42, Pandeyan, Yogyakarta, 55161, Indonesia
[2]SLB Bhakti Kencana I Berbah, Krikilan, Tegaltirto, Berbah, Sleman Yogyakarta, 55573, Indonesia
Email: rully.indra@mpmat.uad.ac.id

Abstract

This study aims to look at tenth-grade a mental retardation student in solving the problem of a division operation. The method used is Single Subject Research (SSR) with learning outcomes as variables that are measured and describe student learning activities in solving problems using Math GASING. The data collection technique is done by video recorder, documentation and test questions. The instruments are a video that is to see student activities during the study, photos to see the results of student work, and work the answer to see student answers to the questions given. Analysis of this research data is analyzed in conditions and between conditions. The results of the research carried out obtained that student experienced an increase in solving the division questions and the student gave a good response to the behavior carried out with Math GASING.

Keywords: Math GASING, Mentally retarded, Division operation, Single subject research.

Abstrak

Penelitian ini bertujuan untuk melihat kemampuan siswa berkebutuhan khusus kelas sepuluh dalam menyelesaikan permasalahan operasi pembagian. Metode penelitian yang digunakan adalah Single Subject Research (SSR) dengan hasil belajar sebagai variabel yang diukur dan menggambarkan aktivitas belajar siswa dalam menyelesaikan masalah yang diberikan menggunakan pembelajaran Matematika GASING. Teknik pengumpulan data dilakukan dengan video, dokumentasi, dan pertanyaan tes. Instrumen penelitiannya adalah video yaitu untuk melihat aktivitas siswa selama belajar, foto untuk melihat hasil kerja siswa, dan mengerjakan jawaban untuk melihat jawaban siswa atas pertanyaan yang diberikan. Analisis data penelitian ini dianalisis dalam kondisi dan antar kondisi. Hasil penelitian menunjukkan bahwa siswa mengalami peningkatan dalam menyelesaikan soal pembagian dan siswa memberikan respon yang baik terhadap perilaku yang dilakukan selama proses pembelajaran dengan Matematika GASING.

Kata kunci: Matematika GASING, Retardasi mental, Operasi pembagian, Penelitian subjek tunggal.

How to Cite: Nuari, L.F., Prahmana, R.C.I., & Fatmawati, I. (2019). Learning of division operation for mental retardations' student through Math GASING. *Journal on Mathematics Education*, *10*(1), 127-142.

In public school and mathematics is one of the subjects that are always there (Cooper & Carsenty, 2016), but there are still many students who are afraid to learn mathematics because the material is difficult and very complex (Laurens, et al., 2018). Abstract of mathematics causes students to find it difficult to learn, whereas teachers less attention to providing learning to students (Widodo, et al., 2018). Other researchers also mentioned the results of his research that students experience difficulties in number operations (Prahmana, 2013). So, there are still many students who find it difficult to learn mathematics that has abstract and complex.

Children with mental retardation can be measured or seen from IQ possessed by making a mistake in determining arithmetic abilities (Koshy, 2017). The intellectual ability of mentally retarded children is usually only around 51 - 70 (Rejokirono & Dewi, 2018). Mild mental retardation experienced by students can cause students difficulties in developing the knowledge and skills they

have even though they are capable students (Kuswardhana, et al., 2017). Other difficulties experienced by mentally retarded students are in measuring and estimating (Yankova & Yanina, 2010). The ability to think is limited, low memory, and the difficulty of abstract thinking of the students is the reason students have difficulties in academic fields such as number division skills (Putri, et al., 2017). Therefore, the mentally retarded students often experience difficulties due to their learning activities, especially in mathematics.

A study states that mathematics is very important to improve students' high thinking skills (Laurens, et al., 2018). Mathematics is also important in solving problems encountered, exploring around us, will be an interesting object if studied (Reis, et al., 2010; Dong, 2018). For adults with mental retardation, learning mathematics can help to be able to interact with their groups and reduce the risk due to inability to count (Prendergast, et al., 2017). For example, counting money and estimating payments is very important to learn in solving mathematical problems (Root, et al., 2018). Counting operations on the most basic mathematical learning, namely addition, subtraction, multiplication, and division need to be studied to do more complex calculations (Juliana & Hao, 2018; Prendergast, et al., 2017). Seeing the importance of mathematics, it is highly recommended to learn mathematics to solve daily problems for a mentally retarded student, especially in counting number.

Mathematics learning, especially for mentally retarded students, can use a variety of methods previously mentioned, but a lot of maturity and time are needed (Sigh & Agarwal, 2013). The use of assistive devices and technology can help mentally retarded students overcome difficulties in measuring (Yankova & Yanina, 2010; Kuswardhana, Hasegawa, & Juhanaini, 2017) and increase student motivation (Alabdulaziz & Higgins, 2017). Besides the use of tools and concrete objects or can be seen highly recommended for mentally retarded students to solve mathematical problems (Prendergast, et al., 2017). Concrete objects are objects that can be seen, held, and explored by students (Prahmana, 2013). These objects should be found by students in everyday life (Soylu, et al., 2017). Such as, the use of newspapers for mathematics learning in operating material is for secondary school students (Root, et al., 2018). Therefore, learning mathematics should use concrete objects so that mentally retarded students are easier to understand and can solve mathematical problems.

Learning material for abstract mathematical concepts makes students feel difficult if not done correctly (Multu & Akgun, 2018). A researcher makes learning design division operations using Math GASING by converting something concrete towards an abstract thing (Prahmana & Suwasti, 2014). Math GASING can be used as an intermediary in teaching the concept of division to students (Prahmana, 2013). The learning outcomes of class X students on physics subjects using Math GASING can increase (Nurfathoanah, 2017). In addition, Math GASING can be applied to help understand students about addition operations (Siregar, et al., 2014). Seeing many researchers who use Math GASING to teach mathematics, Math GASING is the right method to make it easier for students to learn mathematics in the division operation.

This study uses Math GASING to see the learning outcomes of mentally retarded students in material number distribution operations and see student responses. The Math GASING shows students about the process of converting concrete things into abstracts and drawing conclusions made by the students themselves (Prahmana, 2015). GASING is an abbreviation of easy (*GAmpang*), fun (*ASyIk*), and enjoyable (*menyenaNGkan*). Researchers conducted research on mentally retarded students because students still experience difficulties in division operations. In addition, students are less focused, less accurate in counting, and easy to forget. This statement is supported by the research that's been done before that students have difficulty in operating numbers, particularly the operations division (Nuari & Prahmana, 2018). So that researchers hope that students can solve the mathematical problems he faces using the concepts he got from Math GASING and solve the mathematics problems.

METHOD

The type of research used is descriptive research using the Single Subject Research (SSR) research method. Researchers use the SSR to describe or explain students' behavior in solving natural number division questions and observe students in solving problems when given treatment. The design used is A-B design with 1 baseline condition (A) and 1 intervention condition (B). SSR research was conducted on a retarded class X high school student with the initials A. The subject of this study was male and 17 years old. Blood loss is experienced by students from birth. At the time of childbirth the student's head is squeezed too long, then students lack oxygen. This results in a disturbance in the student's brain namely intellectual limitations.

The data collection techniques used in this study is video recordings, documentation, and written tests. The instrument used is based on data collection techniques, namely videos, photos, and test results. The video is used to describe the learning process of students when working on a problem or when an intervention is carried out by the researcher. Photos are used to document the results of student work and as material for analysis and research evidence. The student's written test sheet contains the student's answer in solving the questions given by the researcher with each question validated by the validator lecturer. These instruments are used to see an increase in learning outcomes or influences that occur after the research is conducted.

Data analysis techniques are performed on changes in conditions. First, the length of conditions that state the number of sessions or meetings conducted during the study in the baseline and intervention conditions. Second, the direct tendency is used to see the description of the behavior of the subject being studied. Third, the stability tendency is used to see the stability of each condition. Researchers used a stability tendency of 15%. Fourth, the data trace or trend traces of each measurement condition are used to see whether the data can be reduced (-), up (+) or horizontal (=). Fifth, the level of stability and range is done to see how big or small the range of data groups are in the baseline condition or intervention. Sixth, the level of change that shows the amount of change in

data in one condition. Furthermore, analysis techniques between conditions are almost the same as analysis in conditions. Both of them discussed the same thing. First, the number of variables changed, namely the number of dependent variables in the study. Second, changes in the direction and effect tendencies can take the data in the analysis under conditions. Third, changes in the tendency of stability comes from baseline to intervention, namely to see changes in conditions before and after the intervention based on an analysis in conditions. Fourth, changes in levels are used to see changes that occur based on the difference in data points. Fifth, the percentage of overlap to see changes in the better or worse the influence of intervention on the target behavior.

RESULT AND DISCUSSION

The baseline condition is the measurement of the target behavior (behavior) with no previous treatment, while the intervention is the measurement of the target behavior after treatment. The researcher made observations on the A's condition for 3 days and B conditions 12 days, with duration of about 90 minutes per session. In this study, the dependent variable in this study is the ability of students to solve the problem of the operation of the division of natural numbers (learning outcomes). And the independent variable is the use of Math GASING learning to see student learning outcomes.

Table 1. Student Result

CONDITIONS	DATE	SCORE
BASELINE (A)	4 April 2018	13.75
	5 April 2018	15
	6 April 2018	15.63
INTERVENTION (B)	9 April 2018	12.5
	10 April 2018	36.25
	11 April 2018	32.5
	23 April 2018	31.25
	24 April 2018	28.75
	25 April 2018	33.75
	26 April 2018	33.75
	30 April 2018	32.5
	31 April 2018	33.75
	3 May 2018	33.75
	7 May 2018	33.75
	9 May 2018	30

Table 1 shows the results obtained by a student in solving the distribution operation problem. It is seen that the initial conditions or baseline results obtained are very low, while the conditions of student intervention increase. Student scores are presented in a graph form as in Figure 1.

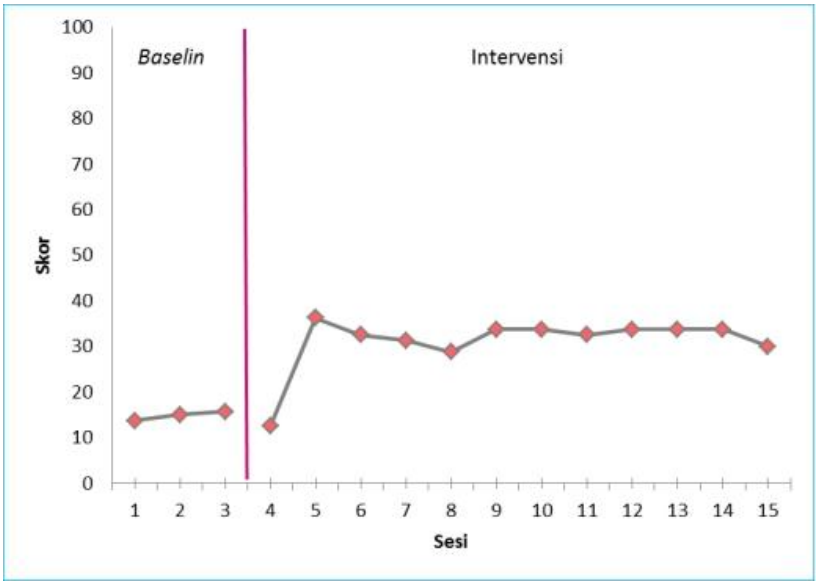

Figure 1. Visual Data of Baseline Conditions and Intervention Conditions

Furthermore, the data obtained is analyzed, namely:

1. The analysis in Conditions
   a. Length of condition

      Figure 1 displays a Figure of student learning outcomes using the A-B research design. Length of measurement conditions 3 sessions for condition A and 12 sessions for condition B.

   b. Direction

      Figure 2 shows the direction trends obtained through the intersection of vertical lines which divide the same parts in each condition with Figures.

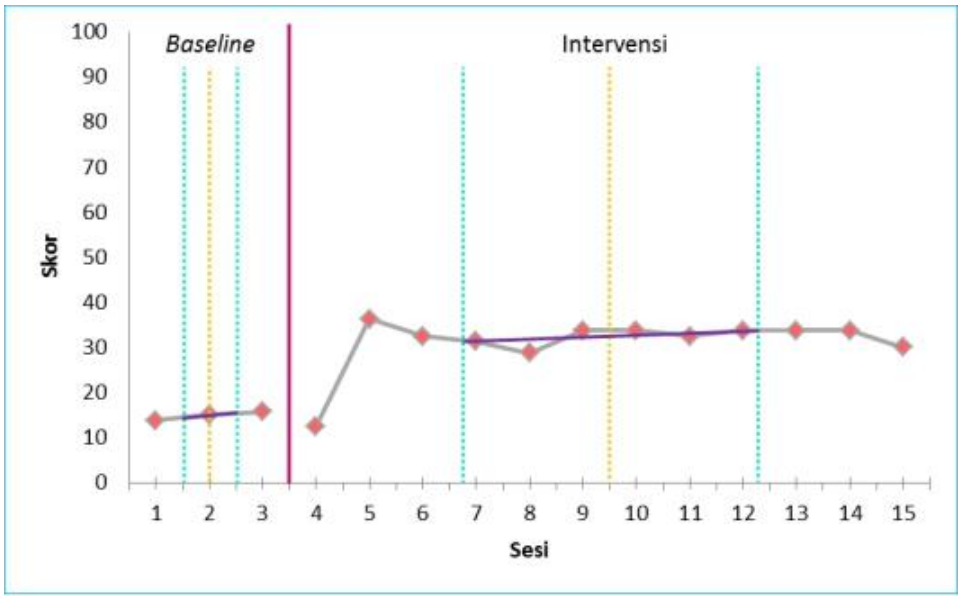

Figure 2. Direction Trends

c. Stability Trends

The stability criteria used to determine the trend of stability is 15%. Stability criteria are used to determine the stability range, upper limit, and lower limit of each condition. The upper boundary, lower boundary and mean level (blue) can be seen in Figure 3.

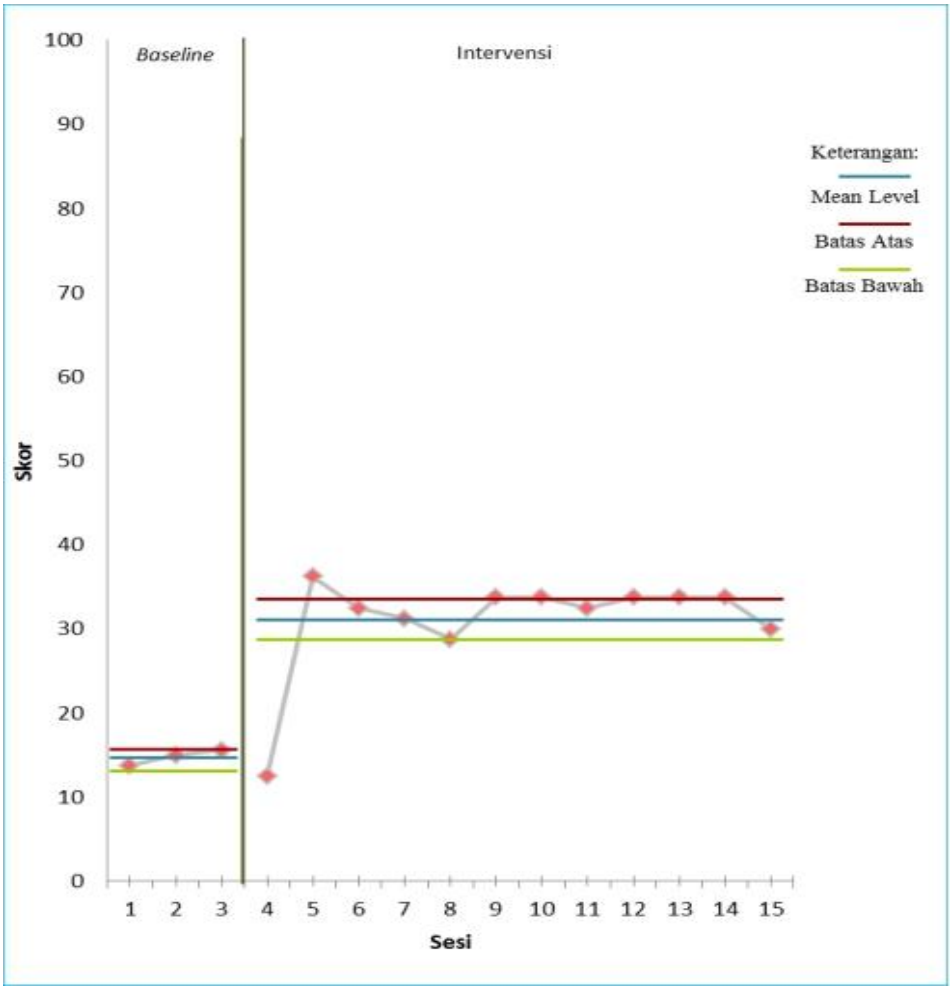

Figure 3. Upper and Lower Boundary Baseline Conditions and Intervention Conditions

Figure 3 shows that the data points for baseline conditions (B) that are in the upper boundary range (red) and lower boundary (green) are 3. The first session data point scores of the student are far below the lower boundary and the smallest among the other scores. The second session data point is also outside the range, greater than the upper boundary and this has an effect on data stability. The percentage of data points on baseline conditions that are in the range of stability is 100%, the data is declared stable. Looking at Figure 3 and through calculations on intervention conditions, there are 10 data points in the upper boundary range (red) and lower boundary (green). The percentage of data points for intervention conditions is 83%, so the data can be said to be stable because the data range is at intervals of 80% - 100%.

d. Data trace or trace tendency

Both conditions show a tendency to flatten due to improved but less visible changes.

e. Stability Level

The calculation of the level of stability of the data can be seen in the calculation of stability trends. The condition of A data is stable with a range of 13.75 - 15.63 stable data intervention conditions with a range of 12.50 - 36.25.

f. Rate of change

In condition A, the difference of 1.88 is obtained, which means there is a change and the intervention condition with a difference of 17.50 shows a change (improved). All components that have been calculated can be summarized as in Table 2.

Table 2. Summary of Visual Analysis Results in Conditions

No	Conditions	A	B
1	Length of Condition	3	12
2	Directions	—	—
3	Stability Trends	Stable (100%)	Stable (83%)
4	Data trace or trace tendency	— (=)	— (=)
5	Stability Level	Stable 13.75 – 15.63	Stable 12.50 – 36.25
6	Rate of change	15.63 – 13.75 (+ 1.88)	30 – 12.50 (+17.50)

2. Visual Analysis Between Conditions

Inter-condition analysis in this study began by comparing conditions (B) with conditions (A), which is 2: 1, which means that the code for the baseline condition is 1 and the intervention condition code is 2. In the analysis of the conditions of this study carried out in several stages, namely:

a. Number of variables

The variables that were changed in this study were student learning outcomes in mathematical problems. In Table 5 the number 1 is written which means that the variable is changed to only one.

b. Changes in direction trends

Changes in direction trends in the analysis between conditions can be determined by taking data from the analysis under conditions. Writing changes in direction trends similar to analysis in conditions, both of which have good effects (+).

c. Changes in Stability Trends

Changes in direction trends can also be determined by looking at data on the tendency for the Stability of analysis in conditions. In this study, the changes that occur in both conditions are stable towards the stable.

d. Level change

The last session data point of the baseline condition was 15.63 and the first session data point for the intervention condition was 12.50. Then disputed to obtain 3.13 for a comparison of conditions B: A. Sign (-) means that it has decreased from the previous data.

e. Percentage of overlap

The percentage of overlap data in the comparison of baseline conditions with intervention conditions was 8.33%. The smaller the percentage overlap the better the influence of intervention on the target behavior.

A summary of all data analysis components between conditions can be seen in Table 3.

Table 3. Summary of Inter-Condition Analysis

No	Comparison of Conditions	B:A (2:1)
1	Numbers of Variables	1
2	Changes in Direction and Effect	(=) (=)
		Positive
3	Changes in Stability Trends	Stable to stable
4	Level change	(15.63 – 12.50)
		(–) 3.13
5	Percentage of Overlap	8.33

Based on the results of the research that has been carried out there is an increase in student learning outcomes in calculating division operations by using Math GASING. Changes that occur can be observed in the graph and summary analysis table above which includes visual analysis, the analysis in conditions, and analysis between conditions. To be clearer, researchers discuss the results of research on each condition, namely:

1. Baseline condition (A)

In condition "A" the first session the student gets a low score, this is because the student has never worked on the same problem before. Whereas in the second and third sessions the value of student begins to increase because the student is already getting used to the forms of questions that they are working on. This increase in value is not much, ranging from 1-5 points. The measurement of the baseline conditions results and the location of the errors is almost the same.

This shows that student experience difficulties in certain parts namely repeated reduction. A student can make deductions, but when doing repeated deductions the numbers used to subtract are not subtracted. Instead, the numbers will be subtracted, as seen in Figure 4.

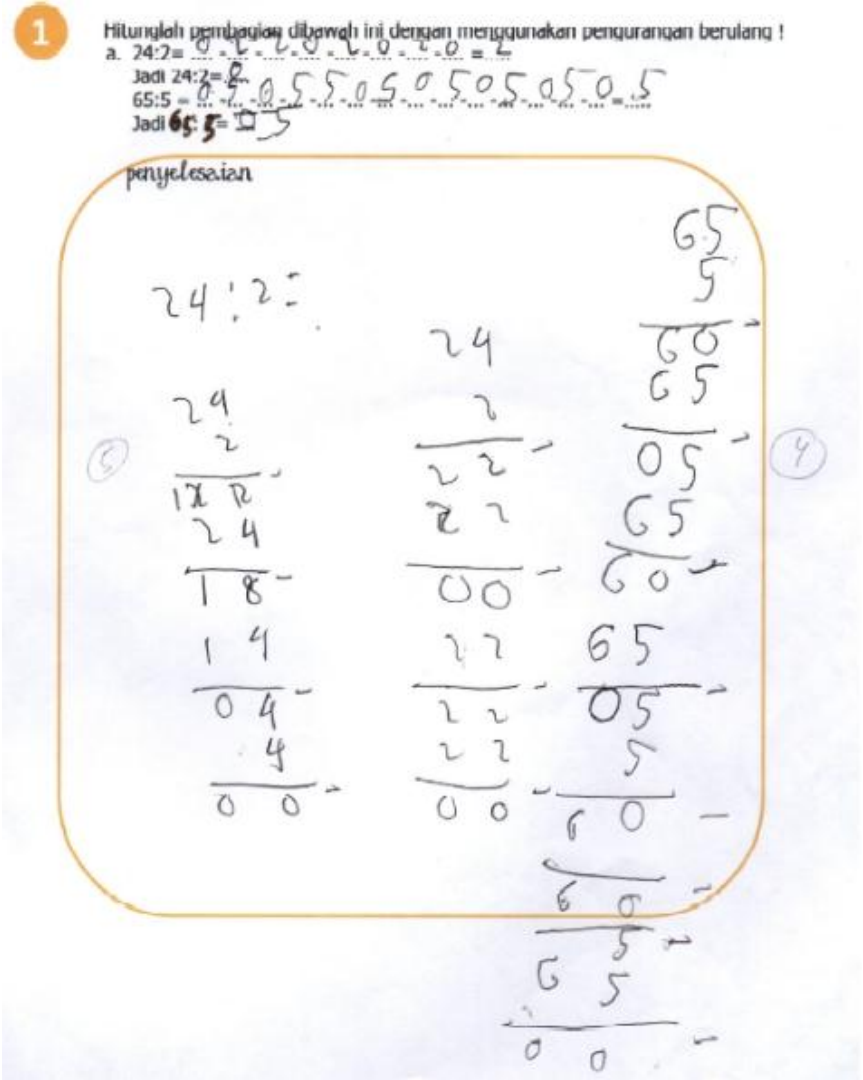

Figure 4. Student Calculation Results in Baseline Conditions

In addition to recurrent subtraction downward, the mentally retarded student also find it difficult to write down the reduction horizontally. A student writes down the deduction based on the subtraction that he did before. Because the reduction made is wrong, the writing of the reduction recurs horizontally is also still wrong and there is a remainder of the reduction. Whereas a researcher with Math GASING states that division is a reduction done repeatedly with the same number until the remaining reduction cannot be deducted again (Surya, 2007: 88). The results of the division operation are of two kinds, namely the number of deductions formed is called the quotient and the subtraction result is called the remainder of the division (Weaver, 2012: 30). Then the result of the division operation is the number of repetitions carried out repeatedly to produce a residual reduction that cannot be subtracted again.

2. Intervention condition (B)

In the intervention conditions, researchers used Math GASING to provide treatment to the student. Learning with Math GASING begins with introducing the concept of division by using real objects. Then divert the use of concrete objects with semi-concrete like the picture. Furthermore, the student is given learning by using residual subtraction until repetitive reduction which in the end students can determine the results of the division of the repeated reduction. This study uses candy as a tool for the student to calculate division questions. The first and second sessions of intervention conditions student are still confused in counting using candy. A student can't conclude the results of the division using the grouping of sweets. As in the second session baseline condition measurement activities is with the distribution of 12: 3. The student is still confused to distinguish the results of the division by division. Measurement activities are shown in Figure 5.

Figure 5. Calculating Distribution Operations with Candies

Measuring the condition of intervention in the third session the researcher introduced how to calculate subdivision operations with subtraction. However, the student still find it difficult to do recurring reductions arranged down with the problem 56: 3. At the beginning of the reduction process can be done well, but on the third subtraction student make mistakes. Student write down the results of zero reduction with three is three, and the fifth reduction in students subtracts the results of the previous reduction by four. The student should subtract the number three according to the distribution problem given.

In the fourth session, the researchers asked a student not to use candies but instead used circle images or candy drawings on paper to calculate division questions. Researchers tried to use candy images so student practice not always using real objects when counting. The images are grouped with members of each group as many as the dividing numbers. The group formed is as a result of the division, as shown in Figure 6 as a result of the fourth session evaluation questions.

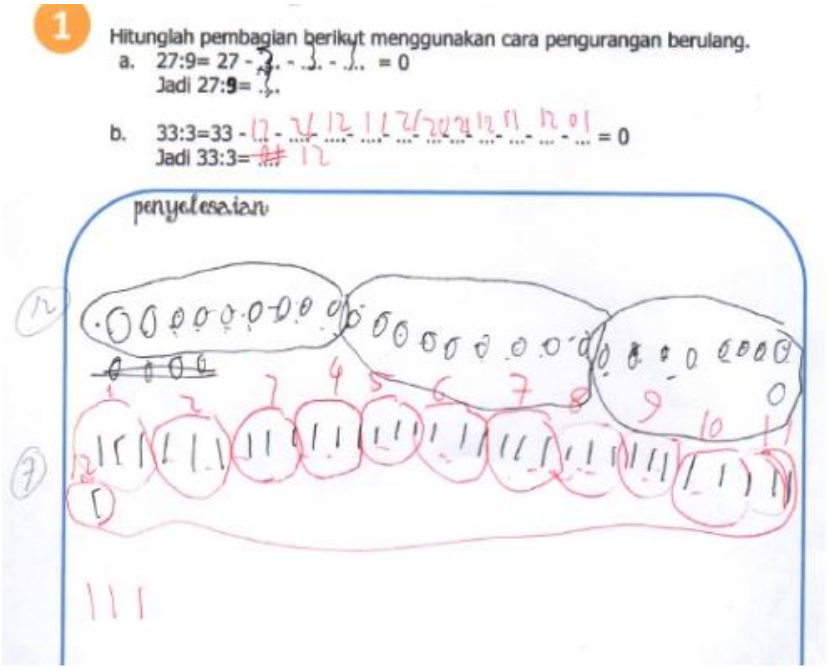

Figure 6. Results of Work on Student Evaluation Questions

A student can follow the directions of the researcher well. At the end of the fourth session, the researchers asked the student about which was easier if counting with candy (concrete) or candies pictures (semi-concrete). Students say that they prefer to use pictures rather than using real candy. The fifth session of the students began to modify by using a rectangular image analogous to the image of folding paper, a triangle as a cake, a circle as money, and a stick, as a tool to calculate the division. However, student experience errors when working using images. The student is sometimes less precise when grouping pictures into one group if the next image is in the second row. This causes the results of student calculations to be incorrect, shown in Figure 7.

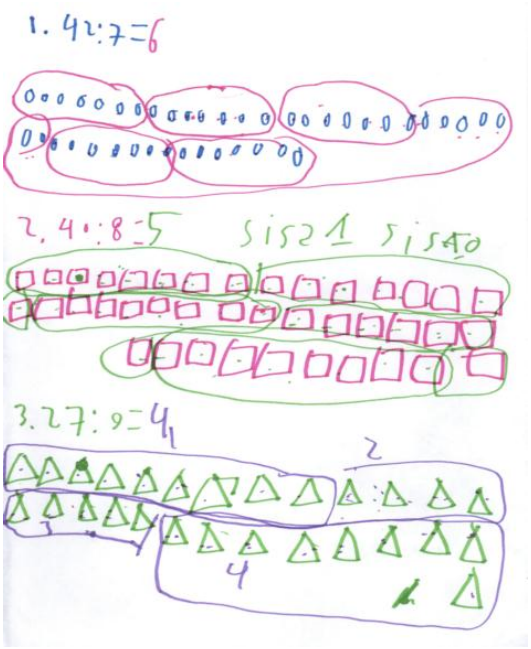

Figure 7. Calculation of Distribution Operations with Pictures

In the sixth and seventh sessions, there were not many changes in values obtained by the student. A student begins to understand how to calculate the division operation problem, which is using images or with repeated subtraction. When compared with the baseline condition the value achieved by a student is not far afloat but has increased. Researchers tried to teach again about repetitive reduction to calculate division questions so student reduces the use of images and switch to numbers that are abstract in nature. In addition to the values, there is a change in attitude that is shown by a student during the measurement of intervention conditions. This change has occurred since the fourth session, the student begins to enjoy learning to use games or practice to remember the previous material.

In accordance with behavior modification, this study brings changes in student behavior to good things. A student feels happier when learning by using games or giving rewards in the form of snacks when they succeed in working on the questions until they are finished. This is in accordance with Math GASING which teaches mathematics material with a fun method so that students feel happy while studying. Strengthened by the opinion of Halyadi, et al. (2016), which states that learning using Math GASING makes students feel easy because it starts with something tangible or concrete, fun because they use games, and fun because students are not forced during learning. It was proven when the researcher asked the students about the opinion on the calculation of the compilation of ways and divisions that were taught by the researcher, such as the Dialogue 1 in session sixth.

*Dialogue 1

Researcher	*: Sukanya yang gimana?* [What are you like?]
Student	*: Koyo ngene* [Like this] *(sambil memperagakan menggambar garis)* [While draw the lines]
Researcher	*: Yang pake apa?* [What is used?]
Student	*: Garis-garis itu* [The lines]
Researcher	*: Pake garis-garis. Kalo nggak pake garis-garis pake apalagi?* [Using the lines. What the else?]
Student	*: Pake yang bulet-bulet. Trus sama segitiga.* [Using the circles. Then a triangle] *…….*
Student	*: Ho o. Kalo porogapit agak angel (siswa menjelaskan pembagian dengan bersusun lebih sulit)* [Sure. If it using the old way more difficult]. Student explains the compiled division more difficult.

The activity that student often do when intervening is telling things that students like. Researchers give time to tell stories so the student does not feel bored when the learning process takes place. Social interactions outside the learning process are very important especially for building students' self-esteem and interest which impacts on good learning outcomes (Aro & Ahoen, 2011). Student learning outcomes that increase can be seen from the scores achieved by students while working on the evaluation of the intervention conditions and it is proven that students want additional questions in the eighth session.

The student has been able to distinguish the results of the division and the rest of the division with repeated reductions. It is clear that student experience changes when compared to the results of measuring baseline conditions. Interventions conducted by researchers to see changes in student learning outcomes. Increased learning outcomes are also influenced by students' willingness or awareness to learn. Indirectly the intervention carried out had a good impact on the student who was initially less interested in learning mathematics. This is also supported by student class teacher statements delivered in Dialogue 2.

*Dialogue 2

Teacher : *Ya memang kita kan menyesuaikan kemampuan anak mbak. Cuman kan sebenarnya kayak A itu menurut saya bisa diubah karakternya lho. Kalo dia bisa merubah karakternya kan kemungkinan kemampuannya bisa dioptimalkan. [The teacher only adjusts students' abilities. It's just that students like A can be changed in character. If A can change its character, it's likely that its capabilities can be optimized].*

Researcher : *Iya bu. [Yes, Miss]*

Interventions conducted by researchers also adjust to students' abilities. Starting from concrete objects in the form of candies to semi-concrete objects and abstract images that use repeated reduction techniques.

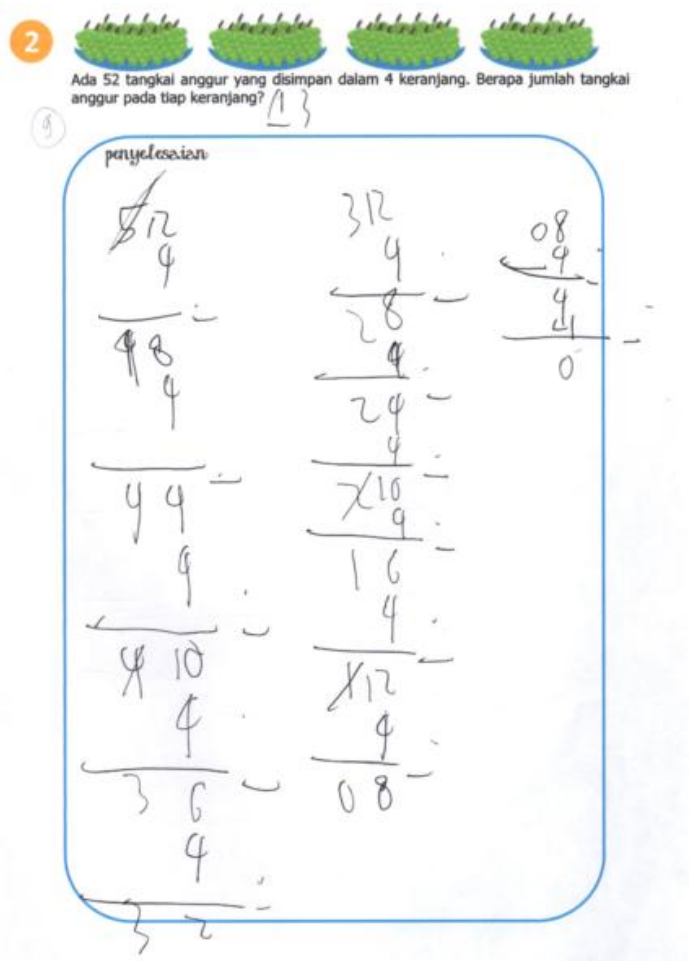

Figure 8. Distribution Results Using Repeat Reduction

The calculation of students using compounded reduction can be seen in Figure 8 which calculates the distribution problem of 52: 4. A student can make deductions correctly so that the remaining reduction is zero. In addition, the student can calculate the results of the recurring subtraction correctly, namely 13. The complete question in Figure 8 is, "There are 52 stalks of grape stored in four baskets. How many grapes stalk per basket? "

In accordance with previous researchers that learning operations sharing using Math GASING always starts from something concrete towards something abstract (Prahmana & Suwasti, 2014). The student has succeeded in using candy as a counting tool, drawing candy or bread in lieu of the actual candy to do repetitive cuts that have leftovers. That is, students have been able to pass the critical point of division as stated by Prahmana (2013) that the critical point of the distribution operation using GASING Mathematics is that students can make a reduction in the remainder, so a student can learn variations in distribution easily. Based on this study Math GASING can help students to improve operating learning outcomes in the distribution of mentally retarded student and provide other positive influences in the form of increased learning interest.

CONCLUSION

Learning the division of operations on student mentally retarded using Math GASING can improve student learning outcomes and provide a good influence on student. The student feel happy to learn to use Math GASING and can be one of the solutions for learning division operations for other mental retardations' students.

ACKNOWLEDGMENTS

Firstly, we would like to thank Universitas Ahmad Dahlan for providing the opportunity to develop research and have facilitated until this research is completed. Then, we thank for SLB Bhakti Kencana 1 Berbah and their teacher for allowing us to conduct the research.

REFERENCES

Alabdulaziz, M., & Higgins, S. (2017). Understanding Technology Use and Constructivist Strategies When Addressing Saudi Primary Students' Mathematics Difficulties. *International Journal of Innovative Research in Science, 6*(1), 1111-1118.

Copper, J., & Karsenty, R. (2016). Can teachers and mathematicians communicate productively? The case of division with remainder. *Journal of Mathematics Teacher Education, 21*(3), 237-261.

Dong, L. (2018). The Investigation of Educational Reform for Economic Mathematics Combined with Financial Characters. *In 2nd International Conference on Education, Economics and Management Research (ICEEMR 2018)*, 605-607.

Halyadi, H., Agustianie, D., Handayani, T., & Windria, H. (2016). Penggunaan Kobesi dalam Matematika Gasing untuk Meningkatkan Pemahaman Materi Perkalian Siswa SD. *Suska Journal of Mathematics Education, 2*(2), 81-88.

Juliana & Hao, L.C. (2018). Effects of Using The Japanese Abacus Method Upon The Addition and Multiplication Performance of Grade 3 Indonesian Students. *International Journal of Indonesian Education and Teaching, 2*(1). 47-59.

Koshy, B., Thomas, H.M.T., Samuel, P., Sarkar, R., Kendall, S., & Kang. G. (2017). Seguin Form Board as an Intelligence Tool for Young Children in an Indian Urban Slum. *Family Medicine and Community Health, 5*(4), 275–281.

Kuswardhana, D., Hasegawa, S., & Juhanaini. (2017). The Instructional Thematic Game for Children with Mild Mental Retardation: For Enhancement of Left-Right Recognition Skill. *International Journal of Electrical and Computer Engineering (IJECE), 7*(1), 469-478.

Laurens, T., Batlolona, F.A., Batlolona, J.R., & Leasa, M. (2018). How Does Realistic Mathematics Education (RME) Improve Students' Mathematics Cognitive Achievement?. *EURASIA Journal of Mathematics, Science and Technology Education, 14*(2), 569-578.

Mutlu, Y., & Akgun, L. (2018). Using computer for developing arithmetical skills of students with mathematics learning difficulties. *International Journal of Research in Education and Science (IJRES), 5*(1), 237-251.

Nuari, L.F. & Prahmana, R.C.I. (2018). Kemampuan Operasi Hitung Perkalian dan Pembagian Siswa Tunagrahita Kelas X SMA. *Journal of Songke Math, 1*(1), 12-25.

Nurfathoanah. (2017). Implementasi Metode Pembelajaran GASING (Gampang, Asyik dan Menyenangkan) Terhadap Hasil Belajar Fisika Peserta Didik Kelas X SMA Negeri 3 Polongbangkeng Utara. *Jurnal Pendidikan Fisika, 5*(3), 351-361.

Prahmana, R.C.I. (2013). Designing Division Operation Learning in The Mathematics of Gasing. In *Proceeding in The First South East Asia Design/Development Research (SEA-DR) Conference 2013* (pp. 391-398).

Prahmana, R.C.I. (2017). The Hypothetical Learning Trajectory on Addition in Mathematics GASING. *Southeast Asian Mathematics Education Journal, 5*(1), 49-61.

Prahmana, R.C.I., & Suwasti, P. (2014). Local Instruction Theory on Division in Mathematics GASING: The Case of Rural Area's Student in Indonesia. *Journal on Mathematics Education, 5*(1), 17-26.

Prendergast, M., Spassiani, N.A., & Roche, J. (2017). Developing a Mathematics Module for Students with Intellectual Disability in Higher Education. *International Journal of Higher Education, 6*(3), 169-177.

Putri, N.D.A., Salim, A., & Sunardi. (2017). The Effectiveness of The Use of Course Review Horay (CRH) Methods to Improve Numeracy Division Skill of Children With Mild Mental Retardation in SLB Negeri Surakarta, Indonesia Year 2016/2017. *European Journal of Special Eduacation Research, 2*(3), 32-42.

Reis, M.G.A.D., Cabral, L., Peres, E., Bessa, M., Valente, A., Morais, R., …. & Bulas-Cruz, J.A. (2010). Using Information Technology Based Exercises in Primary Mathematics Teaching of Children with cerebral Palsy and Mental Retardation: A case study. *TOJET: The Turkish Online Journal of Educational Technology, 9*(3), 106-118.

Rejokirono & Dewi, S.R. (2018). Skills Learning Model for Children with Mild Mental Retardation: Best Practice in Vocational Education Management of Mild Mentally Impaired Student. *In Proceeding International Seminar on Education* (pp. 127-137).

Root, J.R., Cox, S.K., Hammons, N., Saunders, A.F., Gilley, D. (2018). Contextualizing Mathematics: Teaching Problem Solving to Secondary Students with Intellectual and Developmental Disabilities. *Intellectual and Developmental Disabilities, 56*(6), 442-457.

Singh, Y.P., & Agarwal, A. (2013). Teaching mathematics to children with mental retardation using computer games. *Educationia Confab, 2*(1), 44-58.

Siregar, J. H., Wiyanti, W., Wakhyuningsih, N. S., & Godjali, A. (2014). Learning The Critical Points for Addition in Matematika GASING. *Journal on Mathematics Education, 5*(2), 160-169.

Soylu, F., Raymond, D., Gutierrez, A., & Newman, S.D. (2017). The Differential Relationship Between Finger Gnosis, and Addition and Subtraction: An fMRI Study. *Journal of Numerical Cognition, 3*(3), 694-715.

Surya, Y. (2007). *Matematika itu Asyik 2B*. Jakarta: Armandelta Selaras.

Weaver, A. (2012). *Arithmetic: A Textbook for Math 01*. Bronx: Department of Mathematics and Computer Science.

Widodo, S.A., Darhim, & Ikhwanudin, T. (2018). Improving Mathematical Problem Solving Skills Through Visual Media. *J. Phys.: Conf. Ser.* 948 012004.

Zankova, Z., & Yanina, A. (2010). Assistive Devices and Technology in Education of Children and Students with Mental Retardation. *Trakia Journal of Sciences, 8*(3), 273-277.