

Game Card Quartets for Increasing Numeracy Ability of Adding 1-10 for Intellectual Disability Students

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Abstract: This research was conducted with the aim to determine the effect of quartet card games towards the numeracy ability of adding 1-10 for intellectual disability students in the grade III SDLB. This study used an experimental research model pre-post design. The conclusion of this quasi-time-series experimental method is that the quartet card game can improve the numeracy ability of adding 1-10 for students with intellectual disability in the grade III SDLB.

Keywords: Quartet card game, adding number 1-10, intellectual disability.

INTRODUCTION

In the life, everybody really needs the ability to count to solve problems. Wijaya (2012) argues that, mathematics is a symbolic language for expressing quantitative relationships and spaces, which make humans easier to think in solving problems in daily life. The addition is one of the mathematical material, Hendra (2012) states that “the sum is the activity of adding one number with another number, so that, it becomes a result of a whole number. Like: $1 + 3 = 4$, $2 + 3 = 5$ ”.

Intellectual disability is one of the groups of children with special needs. Intellectual disability is often misinterpreted in the general public that the state of mental disorders such as an oddity so that by entering into educational institutions or special care, the child is expected to be back to normal. According to Efendi (2009) “The term children with subnormal mental disorders in some references is also called intellectual disability, memory impairment, feble-minded, mental subnormal, mental retardation. All the meanings of the term are the same, which refers to someone who has intelligence below average.

Based on the observation results in SDLB BC Kedungkandang Malang, it was found that learning mathematics in the grade III about counting 1-10 is not optimal. The activities carried out by the teacher in the lesson was by both explaining the material verbally and writing on the blackboard so that it is less able to attract students’ learning interest.

Teaching math skills for intellectual disability children as stated by Efendi (2009) that, “One thing that needs to be understood for teachers is that call the name is the first step before teaching greater things for the next. The purpose is to increase motivation to learn because the intellectual disability children like to call their names.

The above opinion proves that in teaching intellectual disability children in numeracy skills must go through stages of learning, which includes three stages such as concrete stages, semi-concrete, and abstract. Therefore, the sum calculation skills must be mastered by students from an early age so that the students become skilled and can use arithmetic skills in their daily lives.

To be more successful in teaching math for intellectual disability children should be conveyed using concrete and easily understood objects, using simple examples and language that is easily understood, carried out in interesting and fun situations, so that the children are not easily bored and motivated to learn.

Quartet card game is a children’s game that uses picture cards to play between two or more people. The steps to play a quartet card are as follows: one of the players takes one card that he likes, then the other player plays another quartet card, after that the next players add up the numbers that are on the two quartet cards. This game is very easy to be used as media in learning arithmetic. Satriana, Yunus, and Fatmawati (2013) states, “The selected game is a number card game using number cards and picture media. This simple media can be used by teacher as a tool to introduce numbers so that it can improve children’s cognitive abilities”.

This number card game is very supportive in learning, because it is very interesting and may increase the desire to learn to count intellectual disability children. Quartet cards are usually used to play by children in general, it is also very useful when learning for children with intellectual disabilities. The purpose of this study is to determine whether there is an effect of the quartet card game towards the ability to count 1-10 of intellectual disability students.

Table 1. Pretest Value

No.	Name	Value
1.	Adi	50
2.	Yahya	40
3.	Ridho	40
4.	Putri	45
5.	Alia	45
Sum		220

Table 2. Posttest Value

No.	Name	Value
1.	Adi	100
2.	Yahya	80
3.	Ridho	85
4.	Putri	95
5.	Alia	90
Sum		450

Table 3. D Value

No.	Name	D	D ²
1.	Adi	-50	2500
2.	Yahya	-40	1600
3.	Ridho	-45	2025
4.	Putri	-50	2500
5.	Alia	-45	2025
Sum		$\sum D = -230$	$\sum D^2 = 10650$

METHOD

This research was conducted for 3 weeks at SDLB BC Kepanjen. Before data retrieval, research instruments were first prepared that will be used to retrieve data. Instruments have an important role in efforts to achieve the success or failure of a study. According to Sugiyono (2015) the research instrument is "a tool used to measure observed natural and social phenomena". The instrument in this research is a written test.

Method of Collecting Data

This quasi experimental design research was conducted four times by pretesting students, then doing a post test treatment for four times.

This research was first carried out by giving pretest for the students 4 times, after that, it was given treatment using a quartet card game and at the same time was given a post test.

The subjects of this study were students with intellectual disability in the grade III at SDLB BC Kepanjen. While, the instrument was a written test

used for the pretest and posttest and "t" test was used in data analysis.

FINDING AND DISCUSSION

Findings

The students' initial ability data was obtained from the results of the pre-test conducted before being given a treatment. Based on the results of the pre-test given to students 4 meetings, the students' initial ability in calculating operations of 1-10 intellectual disability students in SDLB BC Kepanjen were getting an average value of 44 included in the underaverage category. The table 1 of pretest average values.

After giving a pretest, the students were given treatment as well as posttest for 4 times. It can be seen that the post-test learning outcomes of intellectual disability students in grade III SDLB BC Kepanjen was an average value of 90 included in the category of very good grades. Table 2 of average posttest scores.

Hypothesis Test

T test formula was used for testing the hypothesis. The first data management was looking for D value by using a table 3.

After finding the value of D, the second way is to find the value of M_D , and can be seen the number of $M_D = -57$. Furthermore, looking for the value of SD_D , and can be seen the value of SD_D is 3,741. Looking for the value of SE_{MD} , and can be seen the value of SE_{MD} is 1.8705.

Looking for value t_o

From the results of these calculations, it was founded that the value of t_o is 24.592. Doing a comparison between t_o and t_t , $df = N-1 = 5-1 = 4$. With df of 4, a significant t_t value of 5% is 2.78, it can be seen that t_o is greater than t_t ; namely: 24,592 is higher than 2.78

The results of the count above indicate that t_o is higher than t_t , meaning that the null hypothesis is rejected. The null hypothesis of this study is that there is no significant effect between quartet card games and the ability to count 1-10 for intellectual disability students in grade III at SDLB BC Kepanjen.

Thus, it can be said the use of a quartet card game affects the learning achievement of counting 1-10 students with intellectual disability in the grade III of SDLB BC Kepanjen.

Discussion

Based on research that has been done, the ability to count 1-10 of intellectual disability students in grade

III in SDLB BC Kepanjen is very low. The students experience intellectual barriers in understanding learning well.

This is in line with other studies conducted by Hastuti (1981) concluding “ intellectual disability children are also very difficult in the material to calculate the sum. The intellectual disability children are still in the learning phase of arithmetic. For example, it is never work well for making a maximum count of 20. “

This is in line with other studies conducted by Patria and Irianto (2014) suggesting that “the results of recognizing the numbers obtained by students in grade I for mild intellectual disability of SDNB Kedungkandang Malang are low. The worksheet results recognize numbers 1 to 10 showing there is only 1 student (25%) and there are 3 students (75%) got score below 50, meaning that below 60 of a minimum completeness criteria determined by the Kedungkandang SDLB Malang. The average value achieved by the students was 50, far below from the minimum completeness criteria “.

The results of research was that the initial treatment using a quartet card game make the students have difficulty in understanding the commands delivered, because students have never learned to use a quartet card game. However, after being treated 4 times, the students begin to understand commands and have no difficulty what is conveyed by the teacher during learning and the students become motivated to learn to count 1-10 using a quartet card game.

Compared with the findings of other studies, this is in line with the opinion of Satriana, Yunus, and Fatmawati (2013) arguing that “So far the teacher in teaching has used a variety of methods and uses concrete media such as fingers, sticks and writing symbols of numbers on the blackboard but the results of learning evaluation have not yet reached expected minimum completeness criteria “.

The conclusion is that the intellectual disability student learning outcomes after being using a quartet card game have increased their ability to count. Learning by using this quartet card game makes the students more interested and enthusiastic to get learning from the teacher.

The results of this study are intellectual disability students in learning to count 1-10 is very difficult. By using a quartet card game students can easily learn to count 1-10 and experience an increase in learning and fast in counting in mathematics.

The students can receive lessons well learning delivered by the teacher even though initially students have difficulty understanding the commands and the material delivered. The frequent repetition of learning causes students to understand the material and has an effect on increasing students’ numeracy skills.

This is in line with the opinion of Aini (2014) explaining that “the quartet card media influences motivating students in learning so that students become active”. This quartet card game is suitable for students and subject matter. By using this quartet card game, students can learn while playing so that it can motivate students’ learning desires, because the students are very difficult in their academic abilities, especially in mathematics.

CONCLUSIONS

The use of appropriate games and in accordance with the needs of students, these games can affect the abilities of students. The analysis results obtained is that the effect occurs after the treatment (treatment) is given using the quartet card perminan. Therefore, the use of a quartet card game has an effect in increasing the numeracy ability of counting 1-10 in the grade III of intellectual disability in SDLB BC Kepanjen.

It is expected that the teacher can get knowledge about the ability and needs of the students, so that, learning can run optimally. For further researchers, to improve the quality of quartet card material, it is expected that this game has empirical validity.

REFERENCES

- Aini, Q. (2014). *Pengaruh Penggunaan Media Kartu Kuartet Terhadap Motivasi dan Hasil Belajar Siswa*. Bandar Lampung: FKIP.
- Efendi, M. (2009). *Pengantar Psikopedagogik Anak Berkelainan*. Jakarta: PT. Bumi Aksara.
- Hastuti, S. (1981). *Pendidikan untuk Anak Tuna Mental*. Yogyakarta: Intan.
- Hendra, J. (2012). Meningkatkan Kemampuan Operasi Hitung Penjumlahan Dengan Pembelajaran Matematika Realistik Pada Anak Tunagrahita Sedang. *Jurnal ilmiah pendidikan khusus*, 1(2), 213-225.
- Patria, D., & Iriyanto, T. (2014). Penggunaan Media Papan Flanel untuk Meningkatkan Hasil Belajar Mengenal Bilangan 1 Sampai 10 Siswa Kelas I SDLB. *Jurnal Penelitian dan Pengembangan Pendidikan Luar Biasa*, 1(2), 130-136.
- Satriana, A., Yunus, M., & Fatmawati, F. (2013). Meningkatkan Kemampuan Mengenal Lambang Bilangan 1 Sampai 5 Melalui Media Flash Card Bagi Siswa Tunagrahita Sedang. *Jurnal Penelitian Pendidikan Khusus*, 2(2).
- Sugiyono. (2015). *Metode Penelitian Pendidikan*. Bandung: Alfabeta.
- Wijaya, A. (2012). *Pendidikan Matematika Realistik*. Yogyakarta: Graha Ilmu.