Clay Educative Games to Increase Learning Concentration of ADHD Children in Ibnu Sina Bandung Inclusion Kindergarten

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Abstract

Attention Deficit Hyperactivity Disorder (ADHD) is a medical term for children who experience behavioral disorders and is found in many children, of course requiring learning that can increase the child's concentration in learning. The aim of this research is to find out how educational clay games can improve children's learning concentration at Ibnu Sina Bandung Inclusive Kindergarten. This research uses the *Single Subject Research* (SSR) experimental method with a quantitative approach. The research subjects were ADHD children at the Ibnu Sina Bandung Inclusion Kindergarten. Data collection techniques through tests and observations. Data were analyzed using descriptive statistics displayed in the form of tables and graphs. It is known that the length of the phase is divided into three, namely *baseline phase* 1 (A) = 3, intervention = 7, *baseline* 2 (A') = 3. In the *baseline phase* 1, you get a mean level score of 15.33 in the low category, in the intervention phase you get a score the mean level was 21.85 in the quite good category, and in the *baseline phase* 2 they got a mean level score of 24.66 in the good category. Based on research results, it shows that educational *clay games* can improve the concentration of ADHD children at Ibnu Sina Inclusion Kindergarten Bandung. This educational *clay* game is recommended to educators and parents because it can increase children's concentration in learning in children who have ADHD.

Keywords: Educational Clay Games, learning for ADHD Children, Learning Concentration.

A. INTRODUCTION

The child is an active personality structure, and is a dynamic, rounded totality. Children are not 'adult humans in miniature' with the same clothes, style, behavior, thoughts, feelings, inner life, etc. as adults (Herawati, 2020). Children are unique individuals, whose personalities are very different from adult human individuals. These children have unique characteristics and dynamics (Baharun, 2016). Chaplin defines the definition of a child as an individual who has not yet reached the level of maturity, which can also mean an individual who is between birth and puberty (Nurhayati, 2016).

Every child has the right to receive a proper education as mandated by the 1945 Constitution. Education is an effort made to grow and develop a person's potential through learning and the learning process (Rini & Tari, 2013). Learning according to Djamaluddin (2019) "is a process of changing a person's personality where the change is in the form of improving the quality of behavior, such as increasing knowledge, skills, thinking power, understanding, attitudes and various other abilities." Meanwhile, learning according to Djamaluddin (2019), "is the process of interaction between students and educators and learning resources in a learning environment." To develop children's potential, have knowledge, skills and shape children's attitudes, requires efforts in the learning process by teachers and the support of a learning environment according to the child's development and needs, and in this case learning for children who lack concentration, hyperactivity or ADHD (Attention Deficit Hyperactivity disorder) . Disorder) (Hidayati, 2014).

ADHD is a term for the behavior of children who experience disorders related to attention problems and excessive behavior (hyperactivity) (Hildayani, 2017). ADHD or Attention Deficit and Hyperactivity

Disorder (GPPH) in the Regulation of the Minister of Health of the Republic of Indonesia Number 330 of 2011, is a medical condition characterized by an inability to concentrate, hyperactivity and/or impulsivity which occurs more frequently and more severely compared to children of the same age. Therefore, learning to develop the potential of ADHD or ADHD children can be trained through concentration learning (Nadzirah, 2017).

Concentration is an effort to focus attention or thoughts on something. Concentration according to Nuryana & Purwanto (2010) is an effort to focus attention on an object. Then Olivia (2011) stated that focusing attention on a particular object is called concentration, and this ability is needed in almost every human activity. So ADHD children must be able to improve their concentration, because when they enter a higher level of education, it requires children to do assignments.

Early childhood is a phase of play age children, so learning in early childhood cannot be separated from the element of play (Nazarullail & Rendy, 2021), and one way of learning to improve concentration in children with ADHD is using game tools that contain elements of learning or educative game tools. (APE). Priyanto (2014) stated that, 'through play activities that are systematic, regular, planned and adapted to age groups and development, children's creative potential will develop optimally'. Sugiarto (in Saputra, 2019) stated that, 'educative game tools (APE) are game tools that are specifically designed for educational purposes'. Hijriati (2017) stated that the importance of educational games is that they can train children's concentration, teach faster, overcome language limitations, and increase children's understanding and memory.

An educational game tool that can hone artistic creativity and is often done in everyday life by young children is through shaping activities using clay (Guslinda & Kurnia, 2018). Forming according to Desi (2021), "is the activity of making three-dimensional works of art using soft materials such as playdough, clay, plasticine and paper powder which is done in various ways such as graining, sculpting, carving and also printing which is done to make desired shape."

Several research results have shown that ADHD children can increase concentration through appropriate educational games, including: (1) Susanti & Surnaningsih (2019) research results conclude that archery has an influence in increasing the concentration of ADHD children, archery can be one of the alternative therapy for children diagnosed with ADHD, (2) the results of research by Sandrawati et al (2019) conclude that the concentration of ADHD children can be improved through intervention with educational game tools (APE), as evidenced by the results of the average total concentration ability score at Baseline 1 is 28.3, it decreases in the intervention phase to 21.75, and in the Baseline phase 2 it becomes 20.33, meaning that the concentration ability of ADHD children increases, and (3) the research results of Putri & Widiastuti (2019) provide conclusions, reinforcement techniques in Playing bunchems has a positive influence on the indicator of taking bunchems according to the color instructed and children can finish the game within the specified time.

Based on the explanation above, how can educational clay games improve the learning concentration of ADHD children at Ibnu Sina Kindergarten Bandung? Ibnu Sina is a children's school that provides inclusive education. The aim is to find out: the application of Clay educational games can improve the concentration of ADHD children, and the difference in the increase in children's concentration before and after being given Clay educational games.

B. METHOD

The method used in this research is the single subject method (Single Subject Research) to obtain data or information on how big the influence of changes regarding individual behavior is. According to Tawney and Gast in Sunanto (2006), "Single subject research is experimental research carried out to find out how much influence the implementation or treatment given to children repeatedly over a certain time". Researchers will see, observe and analyze the child's condition before being given treatment (baseline phase 1), then with the treatment (intervention phase), and the consequences after being given

treatment (baseline phase 2). The design used in this research is the ABA design . With the 'ABA ' design, it will provide a stronger cause and effect relationship between the dependent variable and the independent variable.

In this experiment the researcher used two research techniques, namely observation and testing. Observation involves observing objects directly at the research location. According to Widoyoko (2014), "Observation is the systematic observation and recording of elements that appear in a symptom on the research object." Meanwhile, tests are used to collect data or information by giving children several questions and other tools. The test was carried out to determine the effectiveness of educational clay games to improve concentration for ADHD children at the Inkulsi Ibnu Sina Kindergarten in Bandung.

Data processing in this research is statistical description. By using statistical techniques the description can be presented in the form of tables and graphs. The research data is presented in the form of tables and graphs, which are used to show changes in each session in each phase. Analysis is carried out after all the required information has been collected to examine all data from various research instruments, such as test results, graphs, descriptive statistics, and documents to make it easier to reach conclusions.

C. RESULTS AND DISCUSSION

1. *Baseline* 1

The baseline 1 result is the resulting score from test beginning before The educational *clay game* intervention was applied . Children will be given testing in the form of tests during three session until condition the child's abilities are stable. After the score data is obtained, the data is calculated in percentage form. Following This is results score And percentage of *baseline phase* 1 (A1):

Table 1. Data Results *Baseline* 1

Target Behaviour	Session	Results Score	(%)
Visibility _ eyes, obedience , and imitation (imitation)	1	16	53.33 %
	2	16	53.33 %
	3	14	46.66 %
∑		46	153.33 %
Average _		15.33	51.11 %

On phase *baseline* 1 (A1) score what was obtained in the first session was 16 with a percentage gain of 53.33%, then in the next session the score was the same as the first session, namely 16 with a percentage gain of 53.33%, while in the third session it was obtained 14 with a percentage of 46.66%. The results obtained at *baseline 1 show that eye* sight , compliance and imitation abilities are in the low category.

Results Intervention

In this intervention, the research provided treatment to the children being studied, namely using instructions for each instrument. So that the behavior of ADHD children can be reduced, researchers carry out intervention as much 7 session. So results interventions can be seen in the table below:

Table 2. Intervention Results Data

Target Behaviour	Session	Results Score	(%)
Visibility _ eyes, obedience , and imitation (imitation)	1	18	60%
	2	20	66.66%
	3	23	76.66%
	4	20	66.66%

	5	22	73.33%
	6	25	83.33%
	7	25	83.33%
∑		153	510%
Average _		21.85	72.85%

Based on the table above, the ability of eye gaze, obedience, imitation in reducing children's ADHD behavior in the intervention phase, the first session got a score of 18 with a percentage gain of 60%, the second session got a score of 20 with a percentage of 66.66%, the third session got a score 23 with a percentage of 76.66%, session four children experienced a decrease in score 20 with a percentage of 66.66%, session five experienced an increase with a score of 22 with a percentage of 73.33%, sessions six and seven got a score of 25 with a percentage of 83.33% .

2. *Baseline* 2

Table 3. Data Results *Baseline* 2

Target Behaviour	Session	Results Score	(%)
Viewability _ eye, obedience, and imitation (imitation)	1	24	80%
	2	24	80%
	3	26	86.66%
∑		74	246.66%
Average _		24.66	82.22%

On table in on show scores on children with eye gaze ability , obedience, and imitation (imitation) to reduce ADHD behavior . In the *baseline phase* of the first 2 sessions, the score obtained was 24 with a percentage of 80%. Then in the second session you get a score of 24 with a percentage of 80% and in the third phase experience enhancement from session previously with a score of 26 with a percentage of 86.66%. The results obtained at *baseline* for 2 children show that the ability to look at their eyes, obey, and imitate (imitation) in reducing ADHD behavior can be categorized as good.

Recapitulation Acquisition Data

The children's recapitulation results at *baseline* 1 were carried out for 3 sessions, intervention for 7 sessions, and *baseline* 2 for 3 sessions. The results of this recapitulation show that there are increases and decreases ability child's concentration in view eyes, obedience, and imitation (imitation) to reduce behavior ADHD . Matter This can be seen from *baseline* 1, intervention and *baseline* 2. Subject recapitulation is described in form table And graph in below.

Table 4. Recapitulation Data

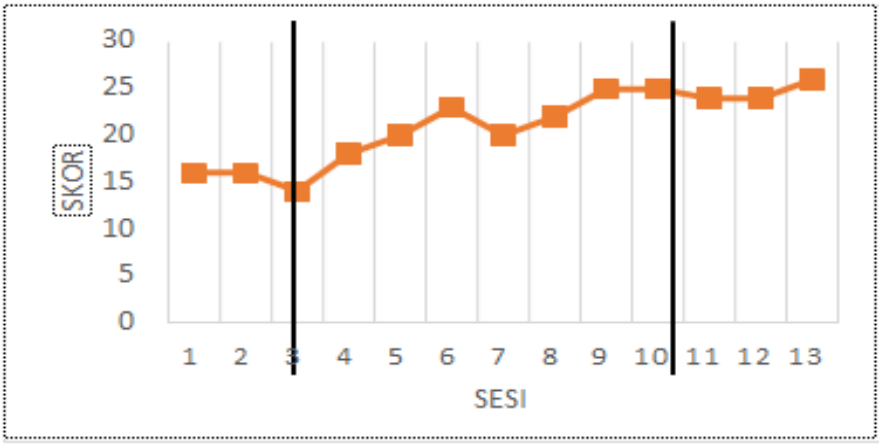
Target *Behaviour*	*Baseli ne* 1	Interventio n _	*Baseli ne* 2
Ability _ View Eyes, Obedience , and Imitation (Imitation)	16	18	24
	16	20	24
	14	23	26
		20	
		22	
		25	
		25	

Analysis Deep Data Condition

Table 5. Recapitulation Results Analysis Visuals in Condition

Condition	A- 1	B	A- 2
Long Condition	3	7	3
Trend Estimation Direction	(Menur un)	(Menai k)	(Ascending)
Just an inclination Footsteps	(-)	(+)	(+)
Stability Level and Range	(el variable) 14 – 16	(el variable) 18 – 25	(Stable) 24 – 26

Chart 1. Recapitulation Data



Level Change Subject	14 – 16 (- 2)	25 – 18 (+7)	26 – 24 (+2)

Analysis Data Between Condition

Table 6. Recapitulation Results Analysis Visual Between Conditions

Condition Which compared to	B/A1	A2/B
Amount Variable Which changed	1	1
Change in Directional Trend And The effect	(+) (-)	(+) (+)
Change Levels	14 – 18 (+4)	24 – 25 (+1)
Changes in Stability Trends	Variable l to Variable l	Stable to Variable l
Change Overlap	0%	0%

Discussion

This research aims to explore the effectiveness of educational clay games in improving the concentration of children who experience Attention Deficit Hyperactivity Disorder (ADHD). By utilizing a concentration training method that involves eye gaze, obedience, and imitation ability, this study recorded significant changes in the participants. In the initial phase or baseline 1, the average concentration level was recorded at 15.33, with an estimated tendency to decrease and a change in level of -2. However, through intervention carried out over seven sessions, the average concentration level increased to 21.85. There is a significant upward trend, with the level change reaching +7. This shows that the principles of clay play learning can have a positive impact in improving the concentration of children with ADHD, especially in terms of eye gaze, obedience, and imitation ability, which ultimately has the potential to reduce behavior related to ADHD.

Furthermore, baseline phase 2 showed further improvement in the concentration of children with ADHD, with the mean level reaching 24.66. Estimates show an increasing trend, with a level change of +2. These results indicate that the effects of previous interventions continue, even after implementation of the intervention is complete. This shows that the learning principles of educational clay games have long-term potential in helping improve concentration in children with ADHD, and can be an effective alternative in reducing behavioral symptoms associated with ADHD in children.

From the results of the analysis between subject conditions, it can be seen that there is a change in directional trend between baseline 1 and intervention conditions, which experienced a shift from decreasing to increasing. These findings indicate a significant increase in the concentration abilities of children with Attention Deficit Hyperactivity Disorder (ADHD) in terms of focusing their eyes, increasing compliance, and imitating actions. This effectively reduces behavioral symptoms usually associated with ADHD, and indicates that the application of educational clay play methods has a significant positive impact in improving the cognitive and social abilities of children with ADHD.

Increasing eye gaze , obedience and imitation abilities in reducing ADHD behavior in *inclusive* children can be seen to increase, where *baseline* 1 produces *a mean* level of 15.33. In the second phase (intervention) there was an increase with a *mean* level of 21.85 and in the third phase (*baseline* 2) there was also an increase, producing *a mean* level of 24.66. So it can be concluded, the data from the research through the three phases above, shows an increase in children's concentration in eye sight, compliance, and imitation of children with ADHD .

Basically, the results of the research above show that educational clay games are effective in increasing the concentration of children with ADHD in terms of eye gaze, obedience, and imitation ability, which in turn can help reduce behavior related to ADHD (Aslindah, 2027). Thus, the implementation of educational clay games in the context of inclusive education, as is done at Ibnu Sina Bandung Inclusive Kindergarten, can be considered as a strategy that has the potential to provide great benefits for children with ADHD. Through appropriate and targeted intervention, this method can help inclusive children to develop their cognitive and social abilities, thus supporting their overall learning process (Hairiyah, 2019). By focusing on developing specific skills, educational clay games are able to provide a fun and interactive approach, which can motivate and encourage children's active participation in the learning process. Thus, Ibnu Sina Bandung Inclusion Kindergarten can consider integrating this method into their educational program as part of a holistic support strategy for children with ADHD and other special needs.

D. CONCLUSION

clay games for ADHD children at Ibnu Sina Bandung Inclusion Kindergarten based on *baseline* results through three *phases* , namely *baseline phase* 1 (A) = 3, intervention = 7, *baseline* 2 (A') = 3. At *baseline* 1 before the educational game intervention was given *clay* , got a mean level score of 15.33 in the low category. Then, when given the intervention of educational *clay* games by learning eye gaze , obedience,

and imitation, starting from the approach stage until the children were able to comply with what was intervened in the learning, they experienced an increase in concentration after being given the intervention, namely getting a *mean* level score of 21.85 in the sufficient category. Good. In the *baseline phase* 2 after being given the educational *clay game intervention* , the child's concentration increased again, namely getting a mean level score of 24.66 in the good category. Based on the results of this research , it shows that educational *clay games* can improve the concentration of ADHD children at Ibnu Sina Inclusion Kindergarten Bandung.

Schools, educators and parents can apply this educational *clay game* in learning activities for ADHD children because it can increase children's concentration. *Clay* educational games can improve children's eye sight , obedience and imitation abilities . Where, concentrate children's learning before the *clay* educational game intervention was in the low category , However, after the educational *clay game intervention,* the child's concentration increased to the good category.

REFERENCES

1. Aslindah, A. (2027). *Alat Permainan Edukatif: Media Stimulus Anak Jadi Aktif dan Kreatif*. Kaaffah Learning Center.
2. Baharun, H. (2016). Pendidikan anak dalam Keluarga; Telaah epistemologis. *PEDAGOGIK: Jurnal Pendidikan*, *3*(2).
3. Djamaluddin, A. (2019). *Belajar dan Pembelajaran*: *4 Pilar Peningkatan Kompetensi Pedagogis*. CV. Kaaffah Learning Center: Sulawesi Selatan.
4. Guslinda, S. P., & Kurnia, R. (2018). *Media pembelajaran anak usia dini*. Jakad Media Publishing.
5. Hairiyah, S. (2019). Pengembangan kreativitas anak usia dini melalui permainan edukatif. *Kariman: Jurnal Pendidikan Keislaman*, *7*(2), 265-282.
6. Herawati, H. (2020). Memahami proses belajar anak. *Bunayya: Jurnal Pendidikan Anak*, *4*(1), 27-48.
7. Hidayati, R. (2014). Peran Konselor Sekolah Dalam Meningkatkan Konsentrasi Pada Siswa Hiperaktif (ADHD). *Refleksi Edukatika: Jurnal Ilmiah Kependidikan*, *4*(1).
8. Hijriati, H. (2017). Peranan dan manfaat APE untuk mendukung kreativitas anak usia dini. *Bunayya: Jurnal Pendidikan Anak*, *3*(2), 59-69.
9. Hildayani, R. (2013). Penanganan anak berkelainan (anak dengan kebutuhan khusus). *Banten: Universitas Terbuka*.
10. Nadzirah, N. (2017). Konseling Integratif dalam Menangani Gangguan Konsentrasi Belajar pada Anak Adhd (Attention Deficit Hyperactivity Disorder). *Intelektual: Jurnal Pendidikan dan Studi Keislaman*, *7*(1).
11. Nazarullail, F., & Rendy, D. B. (2021). Pengenalan Permainan Warna Melalui Konsep Senyawa Polar dan Non Polar. *WISDOM: Jurnal Pendidikan Anak Usia Dini*, *2*(1), 18-32.
12. Nurhayati, T. (2016). Perkembangan perilaku psikososial pada masa pubertas. *Edueksos Jurnal Pendidikan Sosial & Ekonomi*, *4*(1).
13. Nuryana, A., & Purwanto, S. (2010). Efektivitas Brain Gym dalam Meningkatkan Konsentrasi Belajar pada Anak. *Indigenous: Jurnal Ilmiah Berkala Psikologi, 12(1), 88–99*.
14. Olivia, Femi. (2011). *Good Memory Building*. Jakarta: Elex Media Komputindo Kelompok Gramedia.
15. Priyanto, A. (2014). pengembangan kreativitas pada anak usia dini melalui Aktivitas bermain. *Jurnal Ilmiah Guru Caraka Olah Pikir Edukatif*, (2).
16. Putri, P. I., & Widiastuti, A. A. (2019). Meningkatkan Konsentrasi Anak Attention Deficit Hyperactivity Disorder (ADHD) dengan Pendekatan Reinforcement melalui Metode Bermain Bunchems. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, *3*(1), 207-213.

17. Rini, Y. S., & Tari, J. P. S. (2013). Pendidikan: hakekat, tujuan, dan proses. *Jogyakarta: Pendidikan Dan Seni Universitas Negeri Jogyakarta*.
18. Sandrawati, F. C., Jamaris, M., & Supena, A. (2019). Meningkatkan Kemampuan Konsentrasi Anak Adhd (Attention Deficit Hyperactivity Disorder) Usia 5-6 Tahun Dengan Menggunakan Alat Permainan Edukatif (Ape) Dan Berbasis Modifikasi Perilaku. *Visipena*, *10*(1), 27-38.
19. Saputra, A. (2019). Permainan edukatif untuk anak usia dini. *PELANGI: Jurnal Pemikiran Dan Penelitian Islam Anak Usia Dini*, *1*(1), 102-113.
20. Sunanto, J., Takeuchi, K., & Nakata, H. (2006). Penelitian dengan subjek tunggal. *Bandung: UPI Pres*.
21. Susanti, A., & Suryaningsih, W. (2019). Meningkatkan Konsentrasi Anak Attention Deficit Hyperactivity Disorder (Adhd) Melalui Olahraga Memanah. 5. *Ceria (Cerdas Energik Responsif Inovatif Adaptif)*, *2*(2), 44-48.
22. Widoyoko, E. P. (2012). Teknik penyusunan instrumen penelitian. *Yogyakarta: pustaka pelajar*, *15*(1), 1-22.