Learning Design based on Educational Game Guessing Words: Increasing Concentration in Attention Deficit Hyperactivity Disorder Children

Masrum\textsuperscript{1*}, Jasmin Haris\textsuperscript{2}, Hasan Baharun\textsuperscript{3}, Fathorrozi\textsuperscript{1}, Sarofa Indrianti\textsuperscript{3}

\textsuperscript{1}STKIP Kusuma Negara Jakarta, Indonesia
\textsuperscript{2}Institut Pesantren KH. Abdul Chalim Mojokerto, Indonesia
\textsuperscript{3}Universitas Nurul Jadid, Paiton, Probolinggo, Indonesia

\*Correspondence to: masrum@stkipkusumanegara.ac.id

Abstract: This paper aims to analyze and understand the increasing concentration of Attention Deficit Hyperactivity Disorder (ADHD) children through guessing games in Madrasahs. ADHD children have difficulty focusing, so learning while playing can be an alternative treatment. This research uses a qualitative case study approach. The data analysis technique is done through interviews, observation, and documentation. The data analysis uses Millies and Huberman’s data reduction, data display, and drawing conclusions. The results showed that with the stages of forming groups as a mirror of the guidance process, then conveying game instructions as a form of persuasion, starting a guessing game as a form of accompanying, and having rewards as a form of response and more attention from the teacher then the final score of the game was obtained. It is being done, which continues to increase. It can then be understood that guessing games can improve concentration in ADHD children at Madrasah Ibtidaiyah Misbahul Fata, Probolinggo. This study provides implications about the importance of learning design based on the needs of students that teachers must carry out by utilizing a multidisciplinary approach so that learning targets can be achieved.

Keywords: guessing games, concentration, attention deficit hyperactivity disorder (ADHD)


INTRODUCTION

Concentration is understood as focusing the mind on one thing by putting aside all other things that are not related (Nugrahadi & Bhakti, 2021; Ginley & Keane, 2021). A person is said to be concentrating if his attention and focus are only on one object that is the main target in concentrating so that the information that will be absorbed and understood is only information that has been selected (Bili & Lengo, 2019; Richard et al., 2021). Concentration has a significant effect on learning and ultimately has an impact on students' academic achievement (Khotimah et al., 2021). Therefore, in the learning process, it is necessary to concentrate on learning.

However, in reality, for a child with Attention Deficit Hyperactivity Disorder (ADHD), concentration is quite a difficult thing to do. This is because ADHD is a condition that includes brain dysfunction, when a person has difficulty controlling impulses, inhibits behavior and does not support the attention span, or is easily distracted (Azmi & Nurmaya, 2020; Yang et al., 2022). In general, ADHD is when a person shows symptoms of lack of concentration, hyperactivity, and impulsivity, which can cause an imbalance in most life activities. Hyperactive children are also referred to as children who have difficulty concentrating, their attention is effortless to switch, excessive motor skills, and challenging to follow orders (Clarke et al., 2019; Ramadani et al., 2020; Liang et al., 2021). ADHD disorders can last throughout life, from childhood to adolescence and adulthood. Moreover, it can increase the risk of failure to finish school, peer rejection, conflict in the family, drug abuse, defiant behavior, poor performance, depression, and risk of suicide, as well as various physical and mental health problems (Talbott et al., 2021; Tura, 2022).

Difficulty concentrating is an indicator of learning problems faced by students because it will be an obstacle to achieving the expected learning outcomes. The relationship between ADHD and learning difficulties is very understandable, as happened to several students at Madrasah Ibtidaiyah (MI) Misbahul Fata, Probolinggo, East Java, among which ADHD children lost attention and concentration in their lessons and instead turned their attention to general situations. The learning environment includes pictures on the classroom wall, the sound of vehicles outside the classroom, and so on. Children with attention disorders have difficulty focusing when doing tasks and often feel reluctant when bored with the given task, so the task is not completed correctly. In general, children with ADHD in reading and writing learning disorders are a loss of concentration and an inability to focus.
The specific characteristics of children with special needs are generally related to the level of functional development (Clarke et al., 2019; Talbott et al., 2021). These characteristics include sensory-motor, cognitive, language, self-skills, self-concept, social interaction skills, and creativity (Nurfadhilah et al., 2021; Manguilimotan et al., 2022). The differences in the characteristics of each student with special needs will require the unique abilities of the teacher. Teachers are required to have the ability related to how to combine the abilities and talents of each child in several aspects. These aspects include thinking, seeing, hearing, speaking, and socializing (Subur et al., 2019; Akdeniz & Ozcelik, 2019; Depuydt, 2021). Although inclusive education has been going on for a long time, in reality, in the field, many schools are still experiencing problems or problems in implementing inclusive education. This is due to the lack of facilities provided by the government, school policies regarding services for Children with Special Needs, the learning process, and the condition of teachers (Yavuz et al., 2021; Yazcayir & Gurgur, 2021).

For this reason, teachers and educators at Madrasah Ibtidaiyah Misbahul Fata order to build the concentration of ADHD students at the institution through guessing games with card media. Learning by playing is an exciting thing for ADHD children. A guessing game is a learning media that uses puzzle card media paired with puzzle answer cards (Sari & Yogica, 2021). The word guessing game is carried out by students guessing the word referred to by the puzzle question card with the correct answer card (Widyantari et al., 2019). Learning to guess words is presented excitingly so that students can play while learning and eliminate boredom from their daily routines and teach students to interact with other students (Mukhlas, 2018). This game is beneficial for ADHD children because ADHD children need other people who can provide an appropriate and personal approach to help them carry out the social interaction process well. Guessing games also invite students to learn while playing (Izatusholihah et al., 2021). This game can also motivate and attract students' attention to learning, so they do not feel bored, and the learning process can be more focused.

Research with a similar theme has been carried out by several researchers, including Mingkala (2021) who said that it is essential for parents to maintain communication, be patient and give more love to their child who has ADHD, and devotes attention to all his behavior to stay in control. From this research, it can be understood that one way to deal with ADHD children is with assistance from both teachers and parents. The research conducted by Chanet and Utami (2021) stated that providing interventions, namely physical activities such as swimming or karate, and mentoring and counseling at swimming areas and subject schools for two weeks can minimize challenging behavior to focus on, sitting still in class.

From this research, it can be understood that physical activity has a reasonably functional role in dealing with ADHD children. Similar research was also conducted by Nurfadhilah et al. (2021) who said that an educational institution must provide an educational program that is appropriate and challenging, but adapted to the abilities and needs of students, as well as assistance and support that teachers can provide so that children -child succeeds. From this research, it can be understood that inclusive education is a part that needs to be continuously developed, especially for ADHD children. Furthermore, in his research, Gunawan (2021) said that children with ADHD disorder with interpersonal communication barriers that stem from the disorder's characteristics are not caused by language delays or traumatic experiences. Therefore, the role of parents and teachers in assisting children with ADHD disorders is to develop interpersonal communication. From this study, it can be understood that the existence of interpersonal communication is also one of the strategies for handling ADHD children.

Of the several studies that exist, only focus on how to deal with ADHD children, and no one specifically discusses how to improve the concentration of ADHD children who have difficulty concentrating through an educational game in the classroom, namely guessing words using cards. This research's novelty is to contribute to education and education practitioners to optimize the development and potential of ADHD children. By increasing the concentration of ADHD children, then automatically slowly, a teacher can be said to be able to handle ADHD children properly and correctly. For this reason, this research needs to be carried out as additional insight and a complement to existing research. This study focuses on how the teacher's strategy in increasing the concentration of ADHD children is through a guessing game with cards at MI Misbahul Fata, Banyuanyar, and Probolinggo to improve the concentration of ADHD children.

METHODS

The researchers used a qualitative case study approach to understand and analyze the themes mentioned above (Moleong, 2019). This study focuses on the efforts of teachers at Madrasah Ibtidaiyah Misbahul Fata, located in Probolinggo Regency, in increasing the concentration of ADHD children through guessing games with cards that have been well-designed, planned, and systematic. The data was obtained through interviews, observation, and documentation. This activity was carried out since the researchers determined the research focus around January 3 to mid-March 2022, then described the research problem before going to the field and continuing to report the research.
The researcher conducted interviews with several informants through the purposive sampling technique, totaling five people: RH as the principal, TH as the deputy head of the curriculum, Bawon Rosyidah as the homeroom teacher, Muhammad Aminullah as the Religion teacher, and Arif Bahtiar as the sports teacher. In this case, the researcher provides a structured description according to the facts and can be measured about the existing conditions at the research location, both in the form of the object under study as well as facts related to these conditions and to conclude later.

Furthermore, to strengthen the research data, the researcher made observations on the learning activities carried out by teachers and students to obtain data on the studied topics. This observation is participatory, in which researchers make direct and close observations and involve themselves intensively in educational and learning activities in the classroom to obtain information that has a deeper understanding. Then the researcher documents various learning activities and activities and essential things related to the research theme as a reinforcement of the previous data.

The data is obtained and written systematically while in the field, then reduced according to the research focus so that researchers can quickly draw a research conclusion (Creswell, 1998). The data analysis refers to Milles and Huberman, namely data reduction, where the researcher first collects the data as a whole, then sorts and chooses according to the research topic. Furthermore, the researcher presents the research data (data display) clearly by the research design that has been determined. The final step is to draw research conclusions as a final finding of the research that contributes to the scientific dynamics of education and learning (Milles & Huberman, 2014).

RESULT AND DISCUSSION

In every educational institution, it is possible to have Attention Deficit Hyperactivity Disorder (ADHD) students, where ADHD students have a disorder, namely, difficulty concentrating (Nurfadhilah et al., 2021). The same thing happened at MI Misbahul Fata, who had ADHD students. If left unchecked, then as a result of the concentration of ADHD students, learning outcomes are not optimal. The efforts made by educators and educators in increasing concentration in ADHD children are by providing learning experiences while playing. This is because concentration is a state of mind or a conditioned association activated by bodily sensations (Bili & Lengo, 2019). The way to activate sensations in the body is to put the body in a relaxed and pleasant atmosphere because, in a tense state, a person will not be able to use his brain optimally. After all, the mind becomes empty (Khotimah et al., 2021). This pleasant atmosphere means that students are relaxed, and no tension threatens them physically or non-physically, namely playing (Krissanthy et al., 2020). The game while learning, in this case, is guessing words. The principal conveyed this in his interview: “Yes, as we all know, is, it is difficult for ADHD children to stay still and want to move constantly, so that is what teachers in ADHD children's classes do while playing. The game used is guessing. Why guess the word? because, in the guessing game, it is considered very suitable for improving children's concentration. Children tend to be interested in that, Ms.

From the explanation, it can be understood that playing while learning which is an option for MI teacher Misbahul Fata to increase the concentration of ADHD children, is a guessing game. The game is considered quite interesting for children. As for the steps, one of the teachers said in an interview:

"Usually I divide the group first, madam, then give instructions or how to play, then the game starts. So, this is the practice of the children in pairs and then being asked to guess the word on the card. So, whoever can guess the word well and get the highest score will get a prize from me, sis. This game is very influential on ADHD children Ms. Because of his difficulties, he could not stay still and wanted to keep moving. So in this case, we are facilitating his movement media."

From the explanation, it can be understood that the steps in the guessing game for children with ADHD are to form groups, give directions, start guessing words, and give appreciation for students who have the
highest scores, which can be described as follows;

Figure 2. Game Play Process

Forming a Group
The first step taken by MI teacher Misbahul Fata in the guessing game for ADHD children is to form a group; this is as conveyed by one of the teachers in his interview who said that "Usually I form a group first, sis, for example, student a and student b. I usually group it by type of child. Children who tend to be introverted or silent, I combine them with busy children."

From the explanation, it can be understood that the first step in the guessing game at MI Misbahul Fata is to form a group. The purpose of forming this group is to combine conflicting types of students; in this case, the intention is between types of children who are introverted and cannot be silent. Grouping is one way to teach students to work together and increase motivation so that their group is superior to others in competition (Suryadi, 2019). Learning with groups does not only invite students to understand a lesson directly through scientific group discussions. However, students are also invited to scientific group discussions, but students are invited to start creatively processing good questions so that in real-life applications, students become more active and focused individuals (Murniati et al., 2018).

Guess the word is game-based learning using word cards that can develop thinking and social skills and foster a sense of working together between groups to create a vibrant learning atmosphere.

The form relationship between the division of groups in the guessing game for ADHD children is handled in the form of guidance. As stated by one of the teachers in his interview, "In this group division, what you want to achieve is the handling of guidance for ADHD children. Children with ADHD need special guidance, Ms. So, through grouping at the beginning of the guessing game, this is the beginning of the mentoring process, Ms. Guiding them to be able to unite with their group of friends. Because ADHD children are children others must accompany, my role as a teacher is to provide guidance."

From this explanation, it can be understood that the formation of groups, in this case, is part of the form of guidance for ADHD children. Guidance is a process of assisting (Parhusip et al., 2022). Guidance is the assistance given to individuals (students) so that with their potential, they can develop themselves optimally by understanding themselves, understanding the environment, and overcoming obstacles to determine better plans (Yunus, 2019). Guidance is a process of assisting an expert to an individual or group with the aim that each individual can understand himself, know his environment and plan for his future (Evi, 2020). Educators must provide more services and guidance because ADHD children take a long time to understand the learning delivered by educators (Nurinawati et al., 2021). ADHD children get more direction and guidance in the learning process than other children (Handayani, 2019). Especially if the child is doing activities that are not controlled, the educator must condition the ADHD child. In this case, the educator guides in forming groups before the guessing game begins.

Giving GameDirections
The next step that the teacher takes for ADHD children in the guessing game is to provide directions on playing techniques. One of the teachers in his interview said, "After I finished forming the group, Ms. then I usually told them about the material. Then the students and their groups will be given cards, so there are answers and questions on the cards."

From the explanation, it can be understood that the directions regarding the guessing game were delivered after the group's formation. The steps of the guessing game are, (a) The teacher explains the competencies to be achieved, or the material is approximately 45 minutes, (b) The teacher asks students to stand in pairs in front of the class, (c) A student is given a card measuring 10 x 10 cm which later read the partner. Another student is given a 5 x 2 cm card whose contents cannot be read (folded) and then placed on the forehead or tucked in the ear, (d) While the student carrying a 10 x 10 cm card reads the words written on it while their partner guesses what referred to in the 10 x 10 cm card, the answer is correct if it is by the
contents of the card affixed to the forehead or ear (Suryadi, 2019). The pair may sit down if the answer is correct (according to what is written on the card). If it is not right at the time set, you can direct it with other words as long as you do not immediately answer (Murniati et al., 2018).

From this technique, the teacher is required to be able to persuade the ADHD child. As stated by one of the teachers in his interview, "From some of the technical or game instructions, the leading indicator is how we as teachers can persuade ADHD children to want to follow the rules and be able to concentrate more. Children with ADHD cannot be left alone but need guidance and extraordinary persuasion. For example, after the technical game is conveyed to other students, I again explain to the ADHD child, specifically Ms.

From this explanation, it can be understood that the main focus in the technical delivery of this word-guessing game is how a teacher can persuade an ADHD child to follow the rules of the game, considering that a child with ADHD is a child with difficulty concentrating and will do whatever he likes. Persuading tries to convince someone that what he says is true (Andini & Agustang, 2021). ADHD children get more direction and guidance in the learning process than other children. Because ADHD children have difficulty concentrating and receiving information from educators, educators must re-explain to ADHD children specifically; besides that, educators also supervise every movement of the ADHD child.

Starting Game

The next step is to start the guessing game, as previously stated regarding the technicalities and instructions. As stated by one of the teachers in his interview, "He immediately played after the directions, and the children formed formations with their group partners. Ask each other and answer each other for each pair, Ms. Only the role of the teacher in this case if it is associated with ADHD children is to focus on being a companion, Ms. Because he has difficulty concentrating when doing any activity, he needs always to be accompanied, helped like that."

From the explanation, it can be understood that in the implementation of the guessing game, the main focus for a teacher of ADHD children is his role as a companion. The definition of mentoring is the process, method, and act of accompanying or accompanying (Saudi & Nurhayati, 2021). Mentorship or better known as Mentors. Mentoring usually involves guidance from a more experienced or senior individual; mentoring creates a long-term mentoring relationship (Putra, 2020). There is a need for supervision to ensure that children with special needs can access the lessons well given by teachers during learning, not only particular supervisors who are fully obliged to accompany and guide hyperactive children (Adiputra et al., 2022). Class teachers who work in inclusive schools should have provisions regarding children with special needs so that they can directly motivate students in the learning process in inclusive schools (Handayani, 2019). The role of the teacher is very much needed in accompanying hyperactive children with love, such as tenderness and patience, which children need; in this case, the focus is on hyperactive children (Sari & Fitriawan, 2021). Hyperactive children are not very interested in learning in the classroom, but they are more interested in the objects around them and tend not to be interested in learning or learning (Rahmayani et al., 2021).

Rewards

Next is the reward stage, meaning the final stage of the guessing game with the highest score. As stated by one of the teachers in his interview, "As a form of appreciation for ADHD children who have tried to focus on lessons with this guessing game, I usually give positive sentences or positive reinforcements that can make them even more enthusiastic. This is one form of teacher attention to children with ADHD or special needs. For a normal child, maybe a good grade can make him more active, sis. However, unlike children with special needs, they need appreciation from the surrounding environment; they need more attention."

From the explanation, it can be understood that giving rewards in sentences or positive reinforcement for ADHD children is part of the teacher's attention, which aims to build enthusiasm. Attention is the concentration of thoughts, feelings, and wills carried out intentionally by individuals aimed at objects to obtain clarity from the object being noticed (Fudaddah & Harmanto, 2021). The teacher's attention is one of the external factors that affect the learning outcomes students will obtain (Sari & Rohmawati, 2020). The teacher's attention aims to help children develop self-understanding through their skills, interests, personality, learning outcomes, and opportunities. A good teacher's attention will undoubtedly impact optimal learning outcomes (Anggraini et al., 2019). In this case, the concern is that teachers must have a positive mindset when supervising their students with special needs attentively, trying to be present in their lives, and not judging Educators' awareness of their students with special needs is essential so that teachers can provide good patterns and attention to ADHD children (Budiyarti et al., 2022). ADHD children need more attention than other normal children.

After implementing the application of learning with guessing games, a score calculation is carried out to be a form of evaluation stage in measuring the extent of the implications for the learning concentration of ADHD children at M1 Misbahul Fata. As for the indicator, in this case, the highest score means having a high concentration level. Where concentration in ADHD children is challenging to obtain, this can be seen based on
the acquisition of the following table with 5 ADHD children as follows:

<table>
<thead>
<tr>
<th>Name</th>
<th>Meeting 1</th>
<th>Meeting 2</th>
<th>Meeting 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ad 1</td>
<td>25</td>
<td>40</td>
<td>75</td>
</tr>
<tr>
<td>Ad 2</td>
<td>20</td>
<td>55</td>
<td>60</td>
</tr>
<tr>
<td>Ad 3</td>
<td>20</td>
<td>45</td>
<td>60</td>
</tr>
<tr>
<td>Ad 4</td>
<td>25</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>Ad 5</td>
<td>25</td>
<td>40</td>
<td>45</td>
</tr>
</tbody>
</table>

From the table, the development of the statistical line can then be written, namely:

**Figure 3. Outline of ADHD Student Score Improvement Statistics**

From some of these efforts, namely learning through guessing games, it is known that it can increase the concentration of ADHD children. This is obtained from the graph line that continues to increase even though it is not always high, still indicates a change. This study's results align with the research by Lestari and Fitlya (2020) which state that the concentration level of children with Attention Deficit Hyperactivity Disorder (ADHD) can be increased by providing motion therapy and brain gyms. Furthermore, Azkiya (2021) suggests the importance of games to help deal with children with ADHD, especially those who experience concentration problems. According to him, in a game, the subject is trained to comply with applicable rules, wait for their turn, and concentrate. Increasing concentration is the most crucial target factor because performance at school also increases with an increasing concentration on the subject.

Furthermore, Putri and Widiastuti (2019) also said in their research that using reinforcement in playing bunchems can improve concentration in children with ADHD. Yolanda et al. (2019) who researched the Application of Labyrinth Games to Increase Concentration in Children with ADHD (Attention Deficit Hyperactivity Disorder) at SLB Buksra Banda Aceh, said that there was a significant increase in students' learning concentration after being given treatment and the results of observational data analysis obtained the direction trend and data traces that are positive or increasing the percentage of the three subjects. Likewise, the research results of Sandrawati et al. (2019) stated that the application of behavior modification techniques with prompts (verbal prompts, gestural prompts, physical prompts) and reinforcement (praise, thumbs up, high fives) was proven to be an intervention capable of supporting increased concentration on ADHD child.

**CONCLUSION**

From the long explanation, it can be understood that to deal with ADHD children at MI Misbahul Fata, the teachers try to use guessing games to increase the learning concentration of ADHD children. The guessing game is considered the most suitable by the teachers because it can take over the students' attention. In dealing with ADHD children, a teacher is needed who can guide, persuade, accompany and give more attention. For this reason, several steps taken at MI Misbahul Fata include forming a group as a mirror of the guidance process,
then conveying game instructions as a form of persuasion, starting a guessing game as a form of accompanying, and the existence of rewards as a form of response and more attention than a teacher. This research is limited to the efforts of teachers in dealing with ADHD children. For this reason, further research is needed on other approaches to dealing with ADHD children.

REFERENCES


