



Implementation of Improving Digital Literacy Skills Through The Literacy-Cloud Platform for Attention Deficit Hyperactivity Disorder (ADHD) Learners in Inclusive Schools

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Abstract: The purpose of this research is: 1) To foster a reading or literacy culture 2) To practice enjoyable reading activities 3) To implement reading or literacy activities for students with ADHD. 4) To assist in the registration of Literacy-Cloud platform accounts for teachers and students with ADHD. The research is conducted at SD Labschool UNESA with a population of 12 classes and a sample size of 6 students with ADHD who experience difficulties in focusing on objects or reading materials. The enhancement of digital literacy skills through the Literacy-Cloud Platform, as a movement to motivate, engage, and cultivate digital reading culture, using a participatory persuasive approach. The method used is qualitative descriptive with data sources consisting of interview results, literature review, field notes, and observation results. This activity consists of three treatments: training, assistance with digital information search strategies, and the implementation of enjoyable reading for the students. This program has successfully improved the digital literacy of teachers and students, especially students with ADHD. Evaluation results show that teachers and students are able to search for digital reading materials and apply enjoyable reading practices to the students.

Keywords: Digital literacy, Cloud Literacy Platform, Students with ADHD

I. Introduction

Advancements in technology and digital media have dramatically impacted students, teachers, and reading instruction. The current generation of students is the generation that has the most experience using technology. The statistical data from 2019 released by the Central Statistics Agency (BPS) shows that the majority of Indonesia's population is Generation Z (94%), which refers to those born between 1997 and 2012 (Statistik, 2019).

The main characters of this generation are those who can use technology in all aspects of their lives. For students who start school, they already have experience in the world of technology. The result of broad access and the availability of technology allows learners to seek knowledge and information more extensively about current events as well as future occurrences. Here is the data from the Central Statistics Agency (BPS) 2019 on internet usage in Indonesia.



Fig. 1. Internet user data in Indonesia for the year 2019.

The increasing use of the internet in the field of technology, both in and out of school, such as mobile devices like smartphones with applications, has heightened researchers' interest in investigating the impact of technology use in teaching. The use of technology in the daily lives of students has been documented for the past 30 years which reveals that technology-based games play a central role in technology patterns and critically transform learning. Various conveniences are now available for accessing information due to the expanding reach of the internet from cities to villages, and the prices are becoming more affordable for all layers of society. This is supported by a survey from Media Network Katadata.co.id that shows internet users have continued to increase from 2018 to 2022.

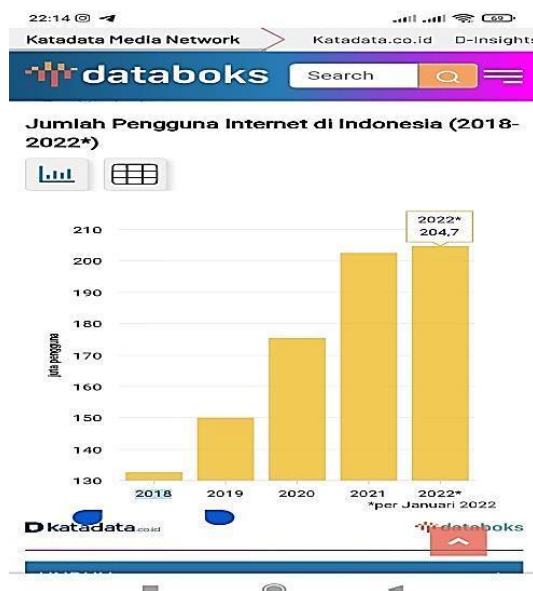


Fig. 2. Graph of the number of internet users from 2018 to 2022.

The issue of illiteracy in Indonesia needs to be eradicated. Literacy is not just about reading and writing. Literacy has several dimensions, including reading and writing literacy, numeracy, scientific literacy, digital literacy, financial literacy, cultural literacy, and citizenship literacy. The main components of literacy are reading and writing. Reading and writing are one of the main priorities that must be taken into account. The habit of reading creates lifelong learners. Various reports indicate that the reading habits and literacy of the Indonesian people are a concerning issue that needs to be addressed seriously. The Program for International Student Assessment (PISA) in 2015, announced in December 2016, showed Indonesia ranked 64th out of 72 countries. Another survey by Central Connecticut State University in 2016 in New Britain, Conn, United States placed Indonesia in a concerning position, ranking 60th out of 61 countries.

The ability to read or literacy will enhance life, and it opens the door to lifelong learning. Literacy will enable learners to achieve their goals, develop their best potential, have broader opportunities in life, and fully participate in their communities and the wider society. The progress of humanity is marked by a culture of literacy, high civilization, and engagement in advancing the world. Literacy in this context means more than just being able to read; it encompasses the life skills necessary to compete and collaborate with other countries to create global prosperity. The literacy rate is the most accurate indicator of a country's educational status.

The low interest in reading or literacy skills has an impact on people's lives. Conceptually, the understanding of literacy adopted and socialized by the Ministry of Education and Culture is not merely about reading and writing activities. More than that, literacy is understood as the ability to access, digest, and intelligently utilize information. The cultivation of a reading culture serves as a means to create literate school and community members who are close to books and accustomed to using reading materials to solve various life issues (Uswatun & Warjana, 2019). A literate society is believed to have a strong character, and this aligns with the goals of President Jokowi's Nawacita.

The Ministry of Education and Culture has introduced the "15 Minutes of Reading" program for all elementary schools across Indonesia to enhance literacy. Realizing the needs of elementary

school students to read books during school days, there is still a significant gap in providing access to quality and appropriate reading materials. There has been an increase in access to relevant and quality digital reading materials, but only a few have outstanding attributes. The increase in the number of digital reading materials can be beneficial for teachers and students with ADHD. Students with attention difficulties and high impulsivity (excessive behavior) are said to experience attention deficit hyperactivity disorder (ADHD) due to their lack of focus or concentration, as well as hyperactivity/impulsivity. Most students with ADHD experience reading difficulties, which results in their low interest in reading. The medical condition known as ADHD involves brain dysfunction when an individual has difficulty controlling impulses, inhibiting behavior, and is unable to maintain attention for long periods or is easily distracted from it (Wahidah, 2018). Students with this disorder will experience difficulties in learning, socialization, and especially in reading/literacy skills. A high level of literacy is required by every student to solve problems, including those with ADHD (Putra, 2018). With the presence of Literacy-Cloud, it can assist both typical students and those with barriers in accessing information or literacy in the form of visual readings or audiovisual materials.

Literacy-Cloud is a quality digital book platform for students to read. This platform is here to accompany learning at home and at school, making it more enjoyable and of higher quality. The Literacy-Cloud platform offers different features. This platform provides resources for teachers and parents. Some distinctive features of the Literacy-Cloud Platform include a large number of student-designed books on various themes and languages, a reading list that filters books based on student needs, and reading videos by authors, trained teachers, parents, and the reading community. Bringing the most advanced technology into learning to enable, motivate, and inspire all learners, regardless of background, language, or disabilities, to reach their maximum potential in literacy. The Literacy-Cloud platform is an online learning platform by Room to Read supported by Google.org. This platform harnesses the power of technology to provide personalized learning and enable continuous and lifelong education. The Literacy-Cloud platform aims to create an environment that motivates learners to read.

Most research shows that it is important to cultivate a reading culture using digital platforms. The habit of reading must follow and adapt to technological advancements today, where technology has made access to reading materials easier through devices like computers. From the presentation above, it shows that SD Labschool UNESA is still in the basic category and is not yet sufficiently capable of supporting the literacy development of students with ADHD. Therefore, there is a need to enhance the digital reading culture, defined as a movement to motivate, engage, and cultivate digital reading, which is outlined in the form of the Implementation of Digital Literacy Improvement Through the Literacy-Cloud Platform for Students with ADHD in Inclusive Schools.

II. Method

The approach taken in this research is a subjective one, aimed at obtaining insights based on the experiences of the research subjects (Moleong, 2012). In using the question-and-answer strategy, analysis employs graphic strategies, which can serve as a means to analyze the status of a group of learners, questions, conditions, frameworks of thought, or sequences of events in the present (Nazir, 1999). Meanwhile, the strategy used to obtain the data is content analysis. The research was conducted by identifying the issues faced by students with ADHD, specifically the enhancement of digital literacy skills as an effort to improve the quality of human resources (HR) for both teachers and students in that school in the field of digital literacy. The ability of ADHD students to improve their digital literacy skills through the Literacy-Cloud platform, which is the result of this research, serves as an online learning medium for teachers and students. Then the information collected is analyzed and concluded according to the needs that will serve as material in understanding the issues in the form of a development methodology using literature study.

A trial program for the use of the Literacy-Cloud Platform for students with ADHD to enhance digital literacy skills through the Literacy-Cloud Platform for students with ADHD at SD Labschool UNESA will be conducted over one month, involving a population of 12 classes with a sample of 6 students with ADHD.

III. Results and Discussion

A. Result

As a foundation for the continuity of human civilization, education is the greatest speculation for the creation of dominant and character-driven human resources. One important component in teaching is the instructor. The instructor in a teaching setting plays a significant and strategic role. This can happen because instructors are at the forefront of implementing instructions. In straightforward terms, an educator is a teacher who imparts lessons to students (Tafsir, 1982). Meanwhile, an instructor is a competent teacher who voluntarily acknowledges and anticipates certain teaching tasks assigned to their parents (Junaidi, 2018).

As a profession, teachers must be required to align the changes of time examined by mechanical advancements with values of character. In this way, schools can become a fortress of ethics for students, allowing them to develop side innovations and utilize them for positive purposes. Actually, teaching cannot happen suddenly because anything that happens suddenly is not teaching. Teaching students is like planting a tree that requires preparation and many interconnected perspectives (QS. Ibrahim, 24-25). As a profession, a teacher must possess academic qualifications, competencies, educator certification, physical and mental health, as well as the ability to realize the goals of national education (Umbara, 2006). Considering the role of educators in teaching is very important, the need for quality teachers has become essential in the millennial era to achieve a golden Indonesia by 2045.

This is what makes teachers carry a heavy burden in their efforts to advance human resources (HR) that are insightful and have character. Of course, to be a millennial teacher, it is not enough to master four competencies: academic, professional, personality, and social competencies. It is also essential for a teacher to have a solid foundation in information technology mastery in today's world. It happened. The rapid developments happening now require teachers to be a part of the progress of innovation itself. If they were born in a conventional era, then they must seek various advancements that are all computerized. Otherwise, they will seem like teachers who are good at recounting the past, even though the past must be left behind. The wave of globalization has given rise to the digital era, a term used to mark the emergence of the millennial age. The digital era is actually more accurately defined as the sophistication of innovative information technology, which continuously connects people's lives with that technology. So it seems that various high-tech equipment has become an inseparable part of their lives (Naisbit et al. 2002).

Technology-based learning, information, and communication is an appropriate strategy to be developed as it aligns with the advancements and demands of technology in the education sector. The progress of technology should be utilized as effectively as possible in teaching by educators. Therefore, it may be essential for a teacher to master it. As agreed with Kusnandar, a competent teacher is one who continuously masters the subject matter to be taught in an intuitive manner that aligns with the times, and continually enhances their abilities in relevant ways, both in terms of information and experience (Kusnandar, 2011).

The utilization and advancement of information and communication are currently developing rapidly. This is usually reflected in the increasing demand for computerized information systems in the field of education. The drive for innovation in information and communication can bring the virtual world into reality before us. Currently, the cyber world has emerged in every corner of life. The world today is no longer limited by distance, space, and time. Therefore, all activities will become easier and faster. With the touch of technological innovation, especially in the virtual realm, it has transformed into a learning framework that is not constrained by space, time, and distance, allowing the relationship between students and teachers to take place anytime and anywhere (Munir, 2009). Therefore, as an initiation in the world of education, a teacher is required to be able to create innovative learning by utilizing digital reading resources that can be accessed anywhere and anytime (Literacy-Cloud Platform). Additionally, it can also be utilized by all students, including those with ADHD.

In the future, e-learning or electronic-based learning can be understood as a kind of structure in education that allows the delivery of teaching materials to teachers and students by utilizing internet media. Ideally, a teacher should be able to utilize and use the e-learning teaching media provided by the school according to the students' preferences so that the material presented can be revisited by

the students and the learning objectives can be achieved. Thus, the competencies of the students will be attained, including cognitive, psychomotor, and affective aspects in participating in the learning process. With these competencies met, the quality of the school will improve.

B. Discussion

To improve the quality of schools, the implementation of the Literate School Ecosystem Program that is friendly to disabilities is an effort to enhance literacy skills for students with ADHD as a way to improve the quality of education, consisting of four main interrelated exercises that support each other

Fostering a reading culture through enjoyable reading activities. Teachers and students, in this case, students with ADHD, are provided with materials and understanding about the importance of a reading culture as part of the teachers' responsibilities to enhance their professionalism through enjoyable reading. There are 4 types of reading activities to make it enjoyable.

First, USSR (Uninterrupted Sustained Silent Reading). In implementing the USSR program, a teacher must accompany students through 5 (five) principles: 1) Students choose their own reading materials; 2) The teacher sets an example by reading silently at the same time; 3) Students select one book, magazine, or newspaper to read; 4) A timer is set for an agreed-upon duration (15, 20, or 30 minutes); and 5) Students are asked to write down the results of their reading in a simple journal.

Secondly, treasure hunting. (treasure hunt). In this activity, the teachers are given keywords to search for book reading titles and read them. This way, they will feel happy as they search for words from the provided keywords, as if they are hunting for treasure. The instruction sentence is as follows: Find the appropriate book title from the given clues (keywords). Example: Find the appropriate book title from the keywords; insects, moth eggs, butterflies, caterpillars. So after typing those words in the search bar, a book titled "Same or Different?" will appear. This was done on the literacy cloud.org account.

Third, the story pyramid. Basically, literacy activities are not just about reading. Writing, counting, watching videos, and making observations are also included in literacy activities. However, as a first step, reading becomes the initial focus of literacy activities. One strategy to cultivate a love for reading is not to place too much emphasis on it. However, it is necessary to be trained to provide feedback or reflections on the books that have been read by creating a simple summary in the form of a pyramid.

To create a reading pyramid, the method is very simple. Prepare several sheets of folding paper, preferably in colorful hues to make it easier to attract attention. Make sure each section of the pyramid uses a different color. Like the concept of a pyramid, the bottom part is the widest and gradually narrows towards the top. For example: In the beginning, this section consists of characters, setting, time setting, plot, and moral message.

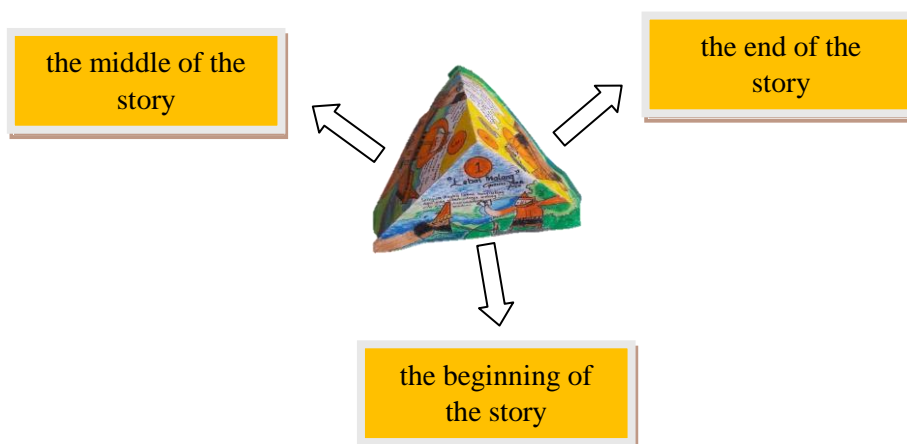


Fig. 3. The pyramid structure in reading

Fourth, Book Talk. In this session, teachers are trained to read a book aloud in front of their peers. This aims to ensure that what is read can be heard well by the listeners.

In the practice of enjoyable reading activities, reading programs indeed need to be continuously socialized to students, especially those who experience reading difficulties (ADHD), so that they can develop a reading habit. Reading habits should be cultivated from an early age so that students' interest in reading can grow to acquire knowledge. Literacy is an important foundation in the learning process. Therefore, teachers must be able to master various reading methods for students who have reading difficulties as well as those who do not, so that the learning process becomes enjoyable.

Implementing enjoyable reading activities. After the teachers were provided with materials and understanding on how to enhance the reading culture, they must implement it with the students. This way, they will know the students' responses regarding how it is read, whether it is enjoyable or not. Based on interviews with all the teachers who carry out reading tasks, they are very pleased because many are now aware of the steps that need to be prepared for reading. Similarly, the students enjoy listening to what the teacher reads, as it sounds good and the story becomes interesting. Here is a picture of the teachers reading in front of the students.



Fig. 4. Fun reading and writing practices for regular students and students with ADHD.

Assistance in creating an account on the Literacy-Cloud Platform. In this activity, teachers were given a presentation on techniques for searching for easily accessible learning resources on the internet. They were introduced to interesting digital books. The goal is to obtain safe and quality reading materials for students. Efforts to enhance reading culture, especially in digital formats, also aim to improve the quality of learning and facilitate the search for references when teachers present relevant material. In this activity, teachers were also assisted in creating accounts on the Literacy-Cloud platform to facilitate the search for children's reading books from various levels and in foreign languages. During the process, observations were conducted to ensure that teachers could easily and enjoyably guide children in exploring reading materials (Indrianti, 2016).

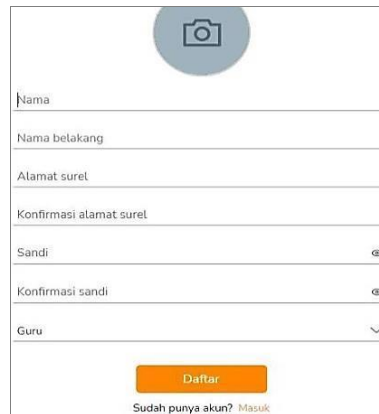
There are several steps that need to be taken to create an account on the Literacy-Cloud Platform, which can be done using a smartphone or a laptop. However, in the following discussion, we will use a laptop with the following steps:

- 1) Open and then go to the browser www.literacycloud.org, then click "Enter."
- 2) Click "Register" to go to the Details Page



Fig. 5. The initial display of Literacy-Cloud

3) The displayed data includes items such as first name, last name, email address, and password.



The image shows a registration form with the following fields: Nama, Nama belakang, Alamat surel, Konfirmasi alamat surel, Sandi, Konfirmasi sandi, and Guru. There is a camera icon above the first two fields. Below the form is a blue 'Daftar' button and a link 'Sudah punya akun? Masuk'.

Fig. 6. How to fill in the data when registering for a Literacy-Cloud account.

4) Once everything is filled out, click "Register" to create an account. After registering, the Literacy-Cloud Platform will be automatically accessible.

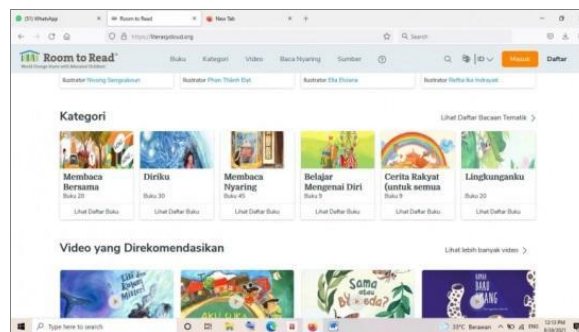


Fig. 7. The menu display when already on the Literacy-Cloud Platform.

So after filling in the data for creating an account on the Literacy-Cloud Platform, teachers and students can access and share digital reading books, story videos, and so on with the students.

IV. Conclusion

The School Literacy Ecosystem Program that is inclusive and friendly to disabilities, aimed at enhancing literacy skills for educators (teachers) and students with Attention Deficit Hyperactivity Disorder (ADHD) through the Literacy-Cloud platform, has successfully transformed teachers' understanding and mindset. They have realized that finding information and learning resources does not necessarily require a physical visit to the library, which can be very time-consuming. This research has effectively improved the skills of both teachers and students in delivering reading materials in an enjoyable manner. Additionally, reading resources for both typical students and those with disabilities (ADHD) can be utilized as safe and engaging literacy sources.

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