

Understanding Learning as a Medium : HTML5 Computer Application for Children with Dyslexia

Puri Purnamasari ¹, Tjutju Soendari ², Imas Diana Aprilia ³.

¹Special Education/ School of Postgraduate , Indonesia University of Education, Bandung, Indonesia

²Special Education/ School of Postgraduate , Indonesia University of Education, Bandung, Indonesia

³Special Education/ School of Postgraduate , Indonesia University of Education, Bandung, Indonesia
¹poerypo22@upi.edu

Abstract

Observe the circular number 4 of 2020 from the minister of education and culture of the Republic of Indonesia regarding the implementation of education policy in the emergency period of the spread of Corona Virus Disease (COVID-19). With regard to the spread of viruses that are more and more increasing the health of birth and inner participant students, teachers, heads of schools and the entire citizens of the school into consideration for stop while the implementation of the process of learning in school. Teachers are literate Technology Information (IT) will disseminate Hypertext Markup Language version 5 (HTML5) to construct a model of learning directly via the web application that can be opened on device sharing through browsers, including that exist on a PC, smartphone, and tablet PCs. The level of severity dyslexia (Anjarsari, 2019) on the ability to read the beginning can be seen based on the type of word being, namely the basic word (monomorphemic) and affixed word (polymorphemic). The method of research literature or literature as a collection of data for checking and/ or explore several journals, books, and documents (both print and electronic) and the source of the data or information other that are considered relevant to the study or studies (Zed, 2003, p 3).

Kata kunci: a model of learning directly, the application of computer HTML5, read the beginning, children dyslexia.

1. INTRODUCTION

Corona Virus Spreading Disease (COVID-19) in 2020 which increased the school community raise awareness will be an outbreak of the disease in the absence of learning activities in schools. A teacher has an important and influential role in supporting the successful implementation of teaching and learning activities (KBM).

Teacher and Lecturer Law No. 14 of 2005 in article 8 states that the competencies that teachers must have are: (1) pedagogical competencies; (2) personality competence; (3) social competence; (4) and competence professional. Referring to one of the demands in Law No. 14 of 2005, the teacher is required to be able to choose the right model, strategy and method in carrying out learning activities, and be able to utilize information and communication technology to communicate and develop themselves (Sari, et al. , 2020, p. 53).

The Direct Instruction learning model or known as the direct teaching model is one of the teaching approaches specifically designed to support students' teaching and learning processes related to declarative knowledge and well-structured procedural knowledge that can be taught in a pattern of gradual, step-by- step activities (Sunarsih, 2020, p. 65).

The problems faced by teachers today are a major driver of the low quality of teachers in Indonesia. In the 1990s a teacher was considered a person who had to be respected and even had a good social status in society, inversely proportional to today's teacher. The impact of these problems , many teachers are not able to organize learning that is interesting and fun. This situation is one of them can not be separated from the lack of development of learning models that are appropriate and efficient. Teachers in general only provide a monotonous learning model, principally teaching materials are available and live in use, and there is no need to go to great lengths to make it (Zuriah, et al, 2016, p.39).

Information technology knowledge enters the rapidly developing Information Technology 4.0 Era. So a teacher is expected to me up right knowledge KBM are still frequently used will be the use of instructional media. HTML stands for HyperText Markup Language. HTML5

(HyperText Markup Language version 5) is a markup language for structuring and displaying content from the World Wide Web (WWW), a major technology on the internet. One of the advantages of HTML5 is that it supports offline storage, such as the HTML5-based Android mobile web application with the aim of meeting the information needs that can be accessed through mobile devices. (Chumairoh, et al, 2014, p. 422).

Presumably thinkers in the world of education are aware of an application of learning and try to apply it in the world of education. So students can learn about something, without feeling they are following a lesson. Everything can be made having fun, with certain scenario games or HTML5-based computer applications. As a result the lessons are no longer heavy. For students who have difficulty following lessons with imagination, lectures or manual books, it will be easier with illustrations in the program or application (Wibhowo & Sanjaya, 2011, p.2).

Difficulty in reading ability of students is closely related to the lessons they will follow, according to Abdurrahman (2003, p.199) if it is not immediately resolved and served by reading ability, then he will experience many difficulties in studying the field of study in subsequent classes. Stage Early reading is generally expressed by Jamaris (2014, p. 136) was started in the early grades of primary school (around 6 years old), will be but there are students who are already doing in kindergarten and at the latest by the time the students are sitting in second grade elementary school (at the age of 7 or 8 years).

DSM 5 (Diagnostic and Statistical Manual of Mental Disorders 5th edition) compared to the previous DSM there was a change in the name and type of (Learning Difficulties) learning disabilities, namely learning Disorder turned into specific learning disorder, which includes reading difficulties. DSM 5 is said that dyslexia is a pattern of learning difficulties with characteristics of problems of recognition and word accuracy, poor decoding and weak spelling ability (Widyorini & Van Tiel, 2017, p.69)

The purpose of prevention of failure in learning to read the beginning and prevent the removal of words or letters or negative effects arising someone dyslexia when the next class rise, researchers tried to find out the model of direct learning through the medium of learning what is right can be used as an alternative.

2. METHOD

The method used in this study uses library research methods, library research or literature can be interpreted as a series of activities related to library data collection methods, reading and recording and processing research materials (Zed, 2003, p. 3). In the literature there are at least four major characteristics that need to be considered by the pen eliti, among other things: First, that researchers face to face with the text (nass) or numeric data and not with direct knowledge of the field.

Second, library data is "ready to use" which means that the researcher does not directly experience the field because the researcher is dealing directly with the data source in the library. Third, that library data are generally secondary sources, in the sense that researchers obtain material or data from second hand and not original data from the first data in the field. Fourth, that the condition of library data is not limited by interest and time (Zed, 2003: 4-5). Based on the above, data collection in research is carried out by checking and / or exploring a number of journals, books and documents (both printed and electronic) and other sources of data and / or information deemed relevant to research or studies.

3. RESULTS AND DISCUSSION

3.1 The Nature of Learning

Learning is an activity that involves a person in an effort to obtain knowledge, skills and positive values by utilizing various sources for learning. Learning can involve two parties, namely students as learners and teachers as facilitators. The most important thing in learning activities is the learning process (learning process). A child can read certainly not obtained only in a moment but takes a long time, the ability to read begins with the ability to spell, recognize letters, words and sentences (Riyani, 2009, p. 1).

3.2 Teacher Competence

Teachers are at the forefront in organizing education in Indonesia. The success of education is in the hands of the teacher. Teachers are individuals who deal directly with students in learning. The teacher has an important role for students of good academic quality, expertise, emotional maturity, moral and spiritual. To support all of that, we need a teacher who has the

qualifications, competence, and high dedication in carrying out his duties Kusnandar (in Alawiyah, 2013, p.67).

According to Daniel (2007) there are 5 professional competencies, namely: 1) mastering the material, structure, concepts and patterns of scientific thinking that support the subjects being taught; 2) mastering the basic competencies of the subjects being taught; 3) developing subject matter that is taught creatively in the learning process; 4) develop professionalism in a sustainable manner by taking reflective action; and 5) utilizing information and communication technology to communicate and develop themselves.

This was reinforced by the mandate of the 2013 curriculum (Permendikbud number 103, 2014) that the learning carried out must be activity-based with the following characteristics: (1) interactive and inspirational; (2) fun, challenge, and motivate students to participate actively; (3) contextual and collaborative; (4) provide sufficient space for student initiative, creativity, and independence; and (5) according to students' talents, interests, abilities, and physical and psychological development. The KBM process in principle uses approaches, strategies, models, and methods that refer to the characteristics described above (Azizah, et al, 2017, p.91).

3.3 Direct learning model (Direct Instruction)

Learning model is a plan or a pattern that is used so that the guidelines in planning KBM. The model is a general pattern of learning behavior to achieve the expected competency or learning goals (Putranta, 2018, p.2)

Direct instructional model is the way that is most effective to teach concepts and skills that are explicit to students who are underachieving though. According to Setyosari (in Ekasari et al, 2016, p.107) the direct learning model is one of the teaching approaches specifically designed to support student learning processes related to declarative knowledge and well-structured procedural knowledge that can be taught with a step-by-step pattern of activities. by step.

From the results of previous research conducted by Sakti (2013) the direct instruction model is more effectively applied in the teaching and learning process with the desired student activities during the learning process which is positive at 95%. In the direct learning model there are five very important phases. Kardi & Nur in the model, can be in the form of lectures, training or practice demonstrations, and group work. And used to convey lessons that are transformed directly by the teacher to students. The syntax in this learning model is presented in 5 stages, as follows:

Table 3.1
The Syntax or Overall Pattern and Flow of Learning Activities

Phase	Teacher's Role
Phase 1 Delivering goals and preparing students	The teacher explains the learning objectives, background information, its importance lessons, prepare students to study.
Phase 2 Demonstrate knowledge and skills	The teacher demonstrates skills with true, or present information step by step Step.
Phase 3 Guiding training	Master plan and the member i guidance initial training.
Phase 4 Check understanding and provide feedback	The teacher checks whether the students have succeeded do a good job, member bait behind.
Phase 5 Provide opportunities for training and application	The teacher prepares opportunities to do advanced training, with special attention on applying to more complex situations and everyday life.

Sources: (Sidik & Agus, 2018, p. 49)

3.4 Computer Applications HyperText Markup Language version 5 (HTML5)

The word media is the plural form of the word medium which comes from Latin which means introduction or intermediary. There is also interpreted the media as a tool to help teach or "teaching aid". In the context of learning and learning, the media can be interpreted as anything that can channel messages or learning material from the teacher as communication to children as communicants and vice versa transferring information obtained.

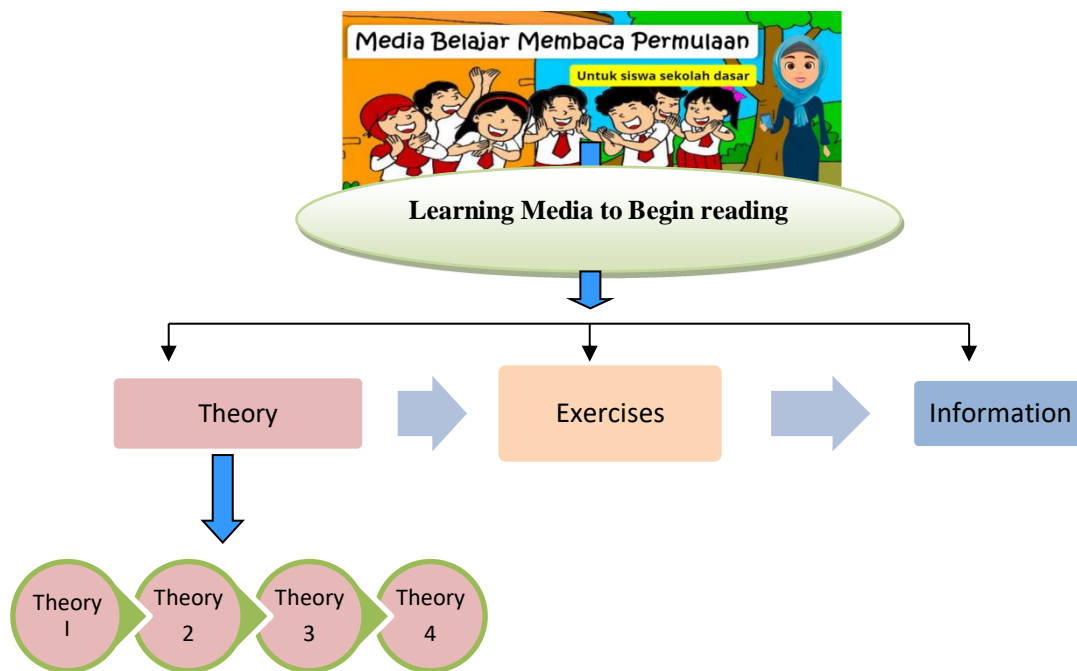
Through the application of media can combine a structured teaching approach with information and communication technology, one of which is application. HTML5 computer applications are also a form of learning matching with the characteristics of children, especially children with dyslexia.

According to Satria et al, 2015 "HTML stands for HyperText Markup Language. HTML is a standard web page rule that has been created since the beginning of the internet. HTML is the fifth revision of HTML5, and began to be adopted in 2011 "

According to Sergei (in Satria, et al, 2015, p. 422) "HTML5 is a markup language that structures the content of the Wold Wide Web , a major technology on the internet. HTML standards refine old elements found in the previous standard, add more semantic elements and add new features to support the creation of more complex web applications. "

HTML 5 Computer Application contains learning material or media that stimulates intelligence. In addition there are exercises that are made to improve the material, repetition and evaluation of questions. The existence of information related to manufacturing behind the scenes of an html5-based computer application , namely:

Table 3.2
Flow chart
Computer Applications Based on Hyper Tex t Markup Language Version 5 (HTML5)



3.5 Reading Beginning

Reading is a complex activity that includes physical and mental. Physical activity associated with reading is eye movement and visual acuity. Mental activities include memory and understanding. people can read well if they are able to see letters clearly, are able to move their eyes swiftly, remember the symbols of language correctly, and have enough reasoning to understand readings (Mulyono, 2003, 201).

Nuerman, Coople & Bredekamp (in Hardianti, 2019, 19) say learning to read is very important for children's success in the future. Childhood from the beginning to the age of eight is the most important period for the development of reading. Factors that influence children's success in reading come from the teacher, the child, environmental conditions, subject matter, and the learning methods used (Nasir, 2017, p.1). These factors are related to the process of learning to read, and if not considered it can affect children's reading success.

The data about the performance of Early reading by children 7-9 years old and comes from Anjarsari (2019 hlm.92) will be the types of reading errors committed by the readers beginning when reading words with a high frequency of occurrence, monosyllabic two or three, without prefixes (prefixes or endings), and controlled by the construction of syllables.

3.6 Dyslexia children

The definition of dyslexia was first issued by the World Federation of Neurology in 1968 (in Susanto, 2017, p. 11), which is a learning difficulty in children which although they have gone through conventional classroom learning processes, fail to master language skills such as reading in harmony with their intellectual abilities.

Etymologically dyslexia is a disorder in the development of reading and writing that generally occurs in children aged 7 to 8 years. In English, dyslexia is called dyslexia. The word Dyslexia comes from the Greek-dys meaning difficulty for dan -lexis which means letters or lexical. Characterized by difficulty learning to read fluently and difficulty in understanding even though normal or above average (IQ). These include difficulties in applying the discipline of phonology, language skills / verbal comprehension (wikipedia, 2020) .

Meanwhile, in DSM 5 (Diagnostic and Statistical Manual of Mental Disorders 5th edition) compared to the previous DSM there was a change in the name and type of (Learning Difficulties) learning disabilities, namely learning Disorder turned into specific learning disorder, which includes reading difficulties. DSM 5 is said that dyslexia is an alternative term to indicate patterns of learning difficulties with characteristics of problems of recognition and word accuracy, poor decoding and weak spelling ability (Tiel EW, 2017, p. 69).

From the above understanding it can be concluded that the limits of dyslexia there is a relationship between neurological conditions with the current / continued academic learning process. Affect each other for good and proper handling of the abilities of dyslexia. But if not by meeting their needs, then the measurement results will only make a small contribution in planning educational programs for children with dyslexia.

3.6.1 Characteristics of Dyslexic Children

According to Mercer (in Abdurrahman, 2003, p. 204) there are four groups of characteristics of dyslexic children namely regarding (1) reading habits; (2) the mistake of knowing the word; (3) misunderstanding; (4) their symptoms.

At the time of reading they often lose track so that there is often repetition or there is a line that jumps so it is not read. They also often show the movement of the head to the lateral direction, left or right, and sometimes put his head on the book. Dyslexic children also often hold reading books that deviate too much from normal children's habits, ie the distance between the eyes and reading books is about 15 inches (approximately 27 , 5 cm).

Dyslexic children often experience errors in knowing words. This type of error includes omission, displacement, substitution, reversal, misspelling, change of place, not knowing words, and jerking. Symptoms of mistakes in reading comprehension appear in the number of errors in answering questions related to reading, unable to express the sequence of stories read, and not being able to understand the main theme of a story. The symptoms of the serbaneka appear like reading word for word, reading with high tension and high notes, and reading with improper emphasis (Abdurrahman, 2003, p.205).

CONCLUSION

The direct learning model through the html5 computer application is expected to be able to improve the reading ability of children with dyslexia in the beginning through the teacher, so that in their implementation they do not experience obstacles and the teacher can implement it perfectly. Besides that, in applying the application k omputer html5 to children dyslexia, the teacher should be given the right of trust convey right lesson plans through pe ngaplikasikan media learning with the aim of prevention of failure in learning to read the beginning and prevent the removal of words or letters as well as the negative effects caused by a dyslexia when the pickup next class.

REFERENCE

Abdurrahman, Mulyono. (2003). *Education for Children with Learning Difficulties* . Jakarta: Rineka Cipta and Depdikbud.

Ariesta , K. , Sari, et al, (2020). Development of SMKN 1 Labang Bangkalan Teacher Competency Through Making *Augmented Reality* Learning Media With *Metaverse* . *Scientific Journal of Community Service* , E-ISSN: 2580-3786 , Pages: 53 . <http://journal.unhas.ac.id/index.php/panritaabdi/article/view/7620>

Chistine, Wibhowo, & Ridwan, S., (2011). *Child Intelligence Stimulation Using Information Technology* . Jakarta: PT Elex Media Komputindo.

- Endang, Widyorini., & Julia, M., V., Tiel . (2014). *Dyslexia Detection, Diagnosis, Treatment at School and at Home* . Jakarta: PRENADA .
- Faridah, Alawiyah. (2013). The Role of Teachers in the 2013 Curriculum. *Journal of Social Problems* , 4 (1) , 67 .
- Farlina, Hardianti. (2019). Scabble Educational Game Tools To Improve Beginning Reading Ability of Children in Group B. *Golden Age Journal* , 3 (1) , 19 .
- Harwintha, Y . , Anjarningsih. (2019). *Dyslexia-Developments in Indonesia* . Jakarta: Indonesian Torch Library Foundation.
- Himawan, Putranta. (2009). *Behavior System Group Learning Model: Behavior System Group learning Model* . Yogyakarta: Himawan Putranta.
- Indra , Way., Yuniar, M., P., & Eko, R . , (2012). The Effect of Direct Learning Model (Direct Instruction) Through Animation Media Based on Macromedia Flash on Learning Interests and Understanding of Physics Concepts of Students in SMA 7 Negeri Bengkulu City. *Exacta Journal*. ISSN: 1412-3617, Page: 1. <http://repository.unib.ac.id/487/>
- Ismail, Marzuki & Hakim, Likamanul. (2018). The Qur'anic Perspective Cooperative Learning Model. *Journal of Thought & Enlightenment* , 14 (2), 40.
- Martini, Jamaris. (2014). *Learning Difficulties (Perspectives, Assessments and Handlers* . Bogor: Ghalia Indonesia.
- Mestika, Zed. (2008). *Library Research Methods* . Issue ^{to} 2 Jakarta: Yayasan Pustaka Obor Indonesia.
- Mita, S., Chumairoh. (2014). Designers Build Mobile Applications on the Android Platform Based on HTML5 Case Study Information Services Website UNIPDU Jombang. *Journal of Educational Revolution* , 3 (1) , 65 .
- Nasir. (2014). Effects of Sensory Methods on Improving Beginning Reading Ability. *Journal of Education and Basic Learning* , 1 (1) , 1 .
- Ngurawan, Sidik & Agus , Purwowidodo. (2013) . *Design of Innovative Based Learning Models (Constructivism, Theoretical and Practical)* , Tulungagung: STAIN Tulungagung Press
- Nurul , Zuriah , Hari, S, & Nurbani, Y. (2016). IbM Teachers in the Development of Innovative Creative Teaching Materials Based on Local Potential . *Dedicated Journal* . 13, 39.
- Ria , R., Ekasari, Gunawan, & Hairunnisyah, S . , (2016). The Effect of a Direct Learning Model Assisted by Laboratory Media on the Physical Activity Creativity of High School Students. *Journal of Physics and Technology Education*. ISSN: 2407-6902, Page: 107. <http://jurnalfkip.unram.ac.id/index.php/JPFT/article/view/296>
- Rudi, S., & Cepi, Riyani. (2009). *Learning Media : Itself , Development, Utilization, and Assessment* . Bandung: CV Wacana Prima .
- Sri, Sunarsih. (2020). Efforts to Improve Thematic Learning through Direct Instruction Learning Model for Class II Students of SDN 01 Mojorejo, Madiun City, 2017/2018 Academic Year. *EDUTIC Scientific Journal* , 1 (1) , 42 .
- Teddy , Satria., Adian, F., R., & Ike, P . , W., (2015). Designing "Fruvenimal" Learning Applications based on HTML5. *Journal of Technology and Computer Systems*. ISSN: 2338-0403, Page: 422. <https://jtsiskom.undip.ac.id/index.php/jtsiskom/article/view/12661>

Teguh, Susanto. (2017). Therapy and Education for Dyslexic Children. Yogyakarta: Familia.

Utiya, Azizah, Suyono, S., & Bertha, Y., (2016). Increasing the Competence of Chemistry Teachers Through Training in Innovative Learning Models in Banyuwangi . *Journal of ABDI*, ISSN: 1502-6518 ,
Pages: 91 . <https://journal.unesa.ac.id/index.php/abdi/article/view/871>