

Development of Mobile Assisted Training with Seamless Learning Basis to Improve Parents' Parenting Skill and Overcome Speech Delay for Two-Year-Old Children

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Abstract: Speech delay in children can cause intelligence disorders, emotional disturbances, and behavioral disorders if not addressed immediately. Early detection by parents of speech delay is influenced by their parenting skills. Therefore, training on parenting skills is important to do. This study aims to measure the effect of developing mobile assisted training with seamless learning basis to improve parenting skills of parents and overcome speech delay for two-year-old children. This research is an experimental study with a quasi-experimental design using a control and experimental class. The population in this study is parents who live in Malang City and have a two-year-old child who has speech delay problems. Collecting data in this study uses questionnaire. Several tests used in this study include instrument validity and reliability tests, analysis prerequisite test, and hypothesis test. Based on the result of data analysis, it is concluded that there is an increase from pre-test to post-test results; besides, there is a significant influence between mobile assisted training based on seamless learning and parenting skills possessed by parents.

Keywords: mobile assisted training, seamless learning, parenting skills, speech delay, two-year-old children

1. INTRODUCTION

During the developmental period that occurs, each child has a different range [1]. There are children whose development is normal and smooth, but there are also some who experience delays [2]. One of the obstacles that can be faced by children is related to language skills [3]. At the age of 2 years, most children already have 20 vocabulary words and increase to 50 or more [4]. It is important to understand that language skills are as important as any other skill in the development of a 2 year old child [5]. The ability to speak is one of the tools used by children to grow and develop and acquire knowledge [6]. Delay in speaking or speech delay can be caused by hearing loss, a stiff tongue, autism, or the child who does not get good stimulation from both parents [7].

In an article written by Wallace (2015), left speech delay will have long-term effects in the form of intellectual and behavioral disorders. It is also confirmed by Shetty (2012) who states that speech delays result in children having social problems. In addition, it is also stated that speech delays will increase the risk for children to have emotional and behavioral problems as they grow up [9]. A study is conducted on 6,941 five-year-old children to measure receptive language skills. Overall, children who show signs of delay in receptive language skills are more likely to develop mental health problems at the age of 34 years [10].

Although the speech development of each child is different, parents need to know the developmental standards, thus, they can identify speech delays immediately [11]. Parents must understand the extent of the child's speech ability, according to his age [12]. The ability of parents to know the development of children is often associated with the skills mastered or parenting skills [13]. The low parenting skills possessed by parents can lead to a lack of early detection carried out on children development [14]. Meanwhile, the result if early detection is not carried out is that parents will be late in knowing the problems that may be experienced by children in the development process [15]. This delay will cause the developmental problems faced by children to get worse because they do not receive immediate treatment [16].

Efforts to prevent and stimulate speech delay cannot be separated from the knowledge of parents regarding parenting skills [7]. Good parenting skills regarding speech delay detection in children can make it easier for parents to recognize signs and stimulation that can be given, thus, if problems are found related to speech delay, they can be addressed immediately [17]. Understanding parents about their duties and roles in child care is an important thing that needs to be done to overcome delays in early detection of children development and ensure optimal children's development [18]. Parenting training is a program to change or improve child care and parenting abilities [19]. Parenting

training is very important because parents are the first and closest microsystem for children [20]. In addition, because parents have more time and opportunities to influence their children than the facilitator or their friends, thus, if parents know, understand, and carry out their parenting roles well, it will have an impact which is the children will have more opportunities to get appropriate stimulation for growth and development from his parents [21].

The urgency of such great parenting skills is unfortunately not matched by the training that can be obtained by parents [19]. Currently, training services for parents to improve parenting skills are still minimally accessible [22]. There are still not many government and private institutions providing programs that are easily accessible for parents [23]. During a pandemic like the current one where social restrictions must be carried out, this results in restrictions on space for movement [24]. It also narrows the opportunities for parents to receive training [25]. As a result, parents who experience problems with parenting tend to use digital technology to access information get confusion about the material that must be accessed for study. Through such limited conditions, a training based on seamless learning becomes a solution that can be applied.

Seamless-based learning allows students to learn without boundaries [26]. In addition, everyone's desire or emotional mood to learn can occur anytime and anywhere [27]. Therefore when it occurs, students need to be accommodated in order they can immediately learn, including the provision of learning resources, learning media, and learning environments [28]. With these conditions, it is possible for students to learn with various scenarios, the learning process can occur in formal or informal conditions, in the classroom or outside the classroom, individual or social, digital and non-digital media, as well as the physical environment or virtual environment [29]. In the context of this research, parents become learners who can easily learn knowledge about parenting skills anywhere and anytime.

The implementation of seamless learning can be collaborated through mobile assisted training. The concept of seamless learning that has seamless learning can be easily integrated with smartphone technology devices given its high flexibility [30]. People can easily find information from their smartphone [31]. Mobile assisted learning is a learning model that involves mobile devices so that students can access learning materials without being limited by space and time [32]. Materials related to parenting skills can also be easily accessed in term of information for parents when combined with mobile devices. Based on the background that has been described, this research is here to find out the effectiveness of the development of mobile assisted training with seamless learning basis to improve parenting skills of parents and overcome speech delay for two-year-old children.

2. METHOD

This research is an experimental research. The type of research used by the researcher or writer to examine (to know) whether or not there is an effect of mobile assisted training based on seamless learning to improve parenting skills of parents and overcome speech delay. The population in this

study is all parents in the city of Malang who have children with speech delay problems. Sampling using purposive sampling technique with the criteria of parents who have two-year-old children with speech delay problems which can be seen in the inability of children to understand the commands or meanings of words used when speaking and the inability of children to pronounce words. The research instrument consists of a set of parenting skill and speech delay questionnaires for children with mobile-assisted training and without mobile-assisted training. This study used a quasi-experimental design involving a control class and an experimental class, where each class was given a pretest before treatment and a posttest after treatment.

$O_1 \ X \ O_2$

O_1 = Pre-test

X = Parenting Program Treatment with CTL basis assisted by mobile learning

O_2 = Post-test

The technique used to obtain data in this study is a test. The tests given in this study were pretest, which is a test that aims to determine the initial parenting skills of parents in overcoming speech delay in children and posttest, which is a test given after parents received mobile assisted training.

Validity and Reliability Test

The validity test in this study is used with the help of the SPSS program by comparing the value of r-count (correlated item-total correlations) with the value of r-table. If the value of r-count > r-table and is positive, then, the question is said to be valid. Reliability test is conducted to determine whether the measuring instrument designed in the form of a questionnaire can be used, a measuring instrument can be used if the measuring instrument is used repeatedly will give relatively the same results (not much different). The reliability test was carried out on all statement items. The decision-making criteria to determine the reliability is if the value of r (Cronbach's Alpha) is greater than 0.60 then the instrument is.

Analysis Prerequisite Test

The analysis pre-requisite test is carried out using the normality test and homogeneity test. The normality test is carried out on the experimental group and the control group both before and after treatment, whether each class is normally distributed or not. The normality test used the Kolmogorov-Smirnov test with a significance level of 0.05. The criteria used are: 1) if the significance value is more than or equal to 0.05, it means the data comes from a normally distributed population, 2) if the significance value is less than 0.05, it means that the data comes from a population that is not normally distributed.

Homogeneity test conducted to determine the similarity of variance to the experimental group and the control group. The homogeneity test used is Levene's homogeneity test with the help of SPSS software. The level of significance used is 0.05 with the following criteria: 1) if the value or significance value is less than or equal to 0.05, it means that the data does not have a homogeneous variance, 2) if the significance value is more than 0.05, it means that the data has a homogeneous variance.

Hypothesis testing

The hypothesis test in this study is one group pre-test-post-test. One group pretest posttest was used to compare the condition before being given treatment and the condition after being given treatment. One group pretest posttest design was carried out 2 times before and after being given treatment.

3. RESULT

A. Instrument Validity Test Result

Based on the results of the calculation of the validity of the instrument, it is known that all items have an r-count value that is greater than the r-table, thus, it can be concluded that all items of the instrument are valid and feasible to use.

TABLE 1. VALIDITY TEST RESULT

Variable	Dimension	r-count	r-table	Information
Parenting Skills	Supporting good behavior	0.756-0.855	0.300	Valid
	Setting limits	0.544-0.859	0.300	Valid
	Proactive parenting	0.434-0.877	0.300	Valid

TABLE 3. NORMALITY TEST RESULT BASED ON LEARNING METHOD FACTORS

Variable	Tests of Normality	
	Kolmogorov-Smirnova	
	Statistics	Sig.
Pretest Parenting Skill	0.643	0.454
Parenting Skill Posttest	0.245	0.132
Pretest Speech Delay	0.342	0.398
PosttestSpeech Delay	0.535	0.342

The result of the normality assumption test for the parenting skill and speech delay variables obtained a value greater than 0.05 ($p > 0.05$), thus, it is considered to be normally distributed.

Hypothesis Test Result

The following presents the results of the pretest and posttest on parenting skill and speech delay variables.

Descriptive

The average result of the parenting skills pretest is 2.10 and the parenting skills posttest is 4.31. The average value of the increase in the parenting skill variable is 2.21%. The average result of pretest speech delay in children is 5.91 and posttest speech delay in children is 3.9. The average value of the increase in the speech delay variable is 2.01%.

Reliability Test

Reliability test is a tool used to measure the consistency of the questionnaire which is an indicator of a variable or construct. A variable is said to be reliable or valid if the answers to questions are always consistent.

TABLE 2. RELIABILITY TEST

Variable	Alpha Cronbach	Standard	Information
Parenting Skills	0.945	0.600	Reliable

Based on the calculation of the instrument reliability test, it is known that each variable has a Cronbach Alpha score > 0.6 . Therefore, it can be concluded that all instruments have a decent level of reliability.

Analysis Prerequisite Test

Here are presented the result of the assumption test as a requirement for the t test, namely the normality test and the homogeneity test of variance. Normality testing is carried out by the Kolmogorov-Smirnov method.

TABLE 4. HYPOTHESIS TEST

Variable	Dimensio n	Pretest		Posttest	
		mea n	Stde v	mea n	Stde v
Parenting Skills	Supporting good behavior	2.33	0.76	4.56	0.64
	Setting limits	2.23	0.65	4.45	0.56
	Proactive parenting	1.75	0.75	3.92	0.53
Speech Delay	Receptive Language	2.34	0.78	4.26	0.43
	Expressive Language	1.92	0.89	3.99	0.63
	Literacy Language	1.65	0.67	3.45	0.43

T-test

The t-test is used to determine whether or not there is a positive and significant impact on the implementation of the seamless learning-based mobile assisted training program compared to conventional training programs to improve parenting skills of parents and overcome speech delay in two-year-old children as seen from the average difference. The mean between the pretest and posttest of the two sample groups were analyzed using the t-test.

TABLE 5. T-TEST RESULT

Variable	Dimension	t-count	t-table	sig	Information
Parenting Skills	Supporting good behavior	4.54 2	1.99 0	0.00 0	Significant
	Setting limits	3.67 5	1.99 0	0.00 0	Significant
	Proactive parenting	4.23 4	1.99 0	0.00 0	Significant
Speech Delay	Receptive Language	6.57 4	1.99 0	0.00 0	Significant
	Expressive Language	5.75 5	1.99 0	0.00 0	Significant
	Literacy Language	3.54 4	1.99 0	0.00 0	Significant

In the t-test the criteria for accepting the hypothesis are: 1) if $t\text{-count} > t\text{-table}$ and $\text{sig} < 0.05$, then H_0 is rejected and H_1 is accepted; 2) If $t\text{-count} < t\text{-table}$, and $\text{sig} > 0.05$, then H_0 is accepted and H_1 is rejected. In the t-test table above, the results of $t\text{-count} > t\text{-table}$ and the overall significance level is $0.000 < 0.05$ where it is concluded that the overall hypothesis is accepted

4. DISCUSSION

This research is an experimental study that aims to improve parenting skills of parents in overcoming speech delay for children aged 2 years through the provision of mobile assisted training based on seamless learning. The mobile assisted training program is a training option that offers easy access to materials anywhere and anytime. This training is also the right collaboration with the principle of seamless learning where learning activities no longer know boundaries.

Similar research on how to overcome speech delay in two-year-old children is also conducted by Orehovalčki et al (2017) with the result of research that there is an increase in speaking ability of 11.1% by using a mobile application. In this study, the research process was carried out by first knowing the level of parenting skills of parents through a pretest. The dimensions studied consisted of supporting good behavior, setting limits, and proactive parenting. After giving the pretest, the parents were given mobile assisted training based on seamless learning related to parenting skills.

The training process consisted of 4 meetings. At each meeting, there are several different agendas regarding the signs of recognizing speech delay signs and ways to stimulate them. At the first meeting, the activities carried out were related to providing complete material regarding speech delay. At the second meeting, there is a sharing session of experiences and materials. At the third meeting, there is a

reflection session on the conditions and actions that had been carried out by parents. At the fourth meeting there is a reflection session on the material and actions that had been given in the training. At the last meeting, the researcher conducted a final test (post-test). The purpose of the posttest was to compare parenting skills before being given treatment and after being given treatment.

Based on the result of the research and analysis of the influence test that has been carried out, it can be concluded that there is a significant increase in the provision of mobile assisted training assisted by seamless learning towards increasing parenting skills to overcome speech delay in two-year-old children. The average score on the parenting skills variable in the pretest supporting good behavior is 2.33, setting limits is 2.23, and proactive parenting is 1.75. While in the post-test, the average value obtained in supporting good behavior is 4.56, setting limits is 4.45, and proactive parenting is 3.92. Based on this average, the percentage increase in parenting skills supporting behavior is 44.6%, the percentage increase in parenting skills setting limits is 44.4%, and the percentage increase is 43.4% in proactive parenting skills.

The average score on the pretest variable speech delay receptive language is 2.34, expressive language is 1.92, and literacy language is 1.65. While in the post-test the average value obtained in the receptive language is 4.26, the expressive language is 3.99, and the literacy language is 3.45. Based on this average, the percentage increase in speech delay in receptive language is 38.4%, the percentage increase in speech delay expressive language is 41.4%, and the increase in speech delay literacy language is 36%. Based on the results of data processing through statistical analysis, the comparison between pretest and post-test parenting skills and speech delay on all dimensions showed an increase. In addition, the results of the t test show a significance level for all variable dimensions of $0.000 < 0.025$ which means that there is an influence that can be given to CTL-based parenting programs assisted by mobile training programs to improve parenting skills of parents in overcoming tantrums for three-year-old children.

Based on the increase in the dimensions that have been studied, supporting behavior is able to affect receptive, expressive and literacy language on speech delay problems experienced by children. Good behavior support from parents to children has a positive impact on language development [79]. This can be seen from the efforts of parents to continue to encourage children to dare to speak, to lead children to dare to express their opinions, and to teach children to start recognizing letters without coercion. Support for positive behavior by children makes them eager to explore and not afraid to try [80]. Parents who often laugh at their children when they try to express their opinion or speak will make children feel inferior and reluctant to learn again [81].

In the dimension setting limits also have an influence on receptive, expressive, and literacy language. This can be seen from the restrictions made by parents on the habits of children who encourage children to be lazy to talk [82]. These habits can be the behavior of children who are addicted to gadgets so that children prefer passive viewing habits and are difficult to talk [83]. In the last dimension which is the dimension of proactive parenting can also affect receptive,

expressive, and literacy language. Proactive parents will create parenting patterns that are in accordance with the child's condition [59]. Proactive parents will not force the children or spoil them [84]. On the other hand, proactive parents will encourage appropriate behavior to improve children's language skills [85]. This shows that good parenting skills have a good effect on stimulating speech delay in children. Meanwhile, good parenting skills can be obtained from mobile assisted training based on seamless learning.

5. CONCLUSION

According to the research and data analysis that has been carried out and the results obtained, it can be concluded that the provision of training based on mobile assisted training based on seamless learning is able to provide an increase in parenting skills of parents in overcoming speech delay in two-year-old children. It can be seen from the increase in the average value of pre-test to post-test on parenting skills and children speech delay. In addition, based on the results of the t-test conducted, it shows that there is a significant effect between mobile assisted training-based with seamless learning basis and parenting skills possessed by parents.

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