

Improved Communication of Parents and Teachers by Using Android-Based Applications as a Media for Forming Character Children at an Early Age in Elementary School SD. Taman Sari 3 Yogyakarta

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Abstract

The process of character building for early childhood students is not optimal due to lack of communication between parents of students and teachers. This lack of communication is caused by teachers' fear of being violating human rights when giving educational punishment or warning to students who have broken the school rules (are not disciplined). To overcome this problem there needs to increase communication between teachers and parents of students, so there is no misunderstanding of the information received. An android-based application is used to facilitate communication between parents and teachers. This application has facilities in the form of information on student violations records, activities at school, tasks that must be done at home, and the amount of attendance. By using the application, parents can monitor and be notified related in real time. The location of this research was conducted in elementary school. SD. Neg Taman Sari 3 Yogyakarta with research subjects are parents of students and class teachers and the total number of respondents was 35 people. This research was conducted using a descriptive method with a quantitative approach. Data collection techniques used were observation, interviews and documentation. The results of testing the effectiveness of communication between parents and teachers, and monitoring parents of their children's activities carried out before and after using the application. Data analysis using T Test using SPSS ver. 17, the result of the significance value (2-tailed) is 0,000 ($p < 0.05$). T test results showed a significant influence on communication problems. The results of the pretest and posttest Mathematics achievement scores with "Mean Paired Differences" obtained an average value of 7.5750 and 7.9953. This result is difference shows the influence of communication between teachers and parents of students.

Keywords: character, early childhood, android, communication

Preliminary

Character education is strongly influenced by the household environment and at school. The golden age of a child is 0-8 years, at this age which formation of behavior and character are very significant relating to the child's development of independence, social, religious, moral and emotional. While child's other developments that are no less important are the development of language, cognitive, and motor skills. This

child's development are not only found in the educational process at family school, but also in the family school. Booth family and school have a very important role, so that the character of discipline can be formed from the beginning. Children get the first and foremost education from the family environment, where informal education is obtained from home. The formal education is obtained when the child studies at school. The transition from informal to formal

education requires ongoing collaboration between parents and teachers. The behavior of children in school is strongly influenced by what children and imitate the habits and the attitude of both parents at home. At the time children are in school, parents strongly entrust the school teachers to continue or replace the role of parents in educating their children. However, many parents often blame the teacher when there is a report on the treatment to their children. This situation because of the lack of communication between parents and teachers. There have even been cases of parents questioning their teacher about the mistreatment and reporting the cases to the police as human rights violations.

The purpose of this study is an effort to make early childhood have better character, personality, to improve children's intelligence. All of this will be achieved if parents and teachers work together and establish good communication. Android-based application was developed for the parents and teachers to provide information directly, can improve communication. By parents monitoring the behavior of their children and activities of the learning process at school. With the above activities it is expected to find policies that support the

success of character education and improve children's achievement in school.

Literature review

There is a need to create a home atmosphere which include effective communication between parents and their children as in the school makes children feel calm, cared for and protected. This communication is very influential on improving the learning achievement in social studies subjects that are difficult for children. (Zainur Rahman, 2015).

The influence of teacher and parent communication of high school student achievement have also been investigated by Hasan Comce et al (2017). This was done by intensifying communication between teacher and parents with the Communication Program. This communication program includes club activities, leadership, class programs, open houses, home visits that have a positive impacts on student achievement. The school provides two-way communication by providing strict rules, socialization, and regular meetings between parents and teachers to overcome obstacles that make student performance decline. Some obstacles are due to the existence of cultural differences, basic characters, different perceptions and the lack of

communication between parents and teachers. Freedom of creativity to develop the potential possessed by children can affect their success in learning achievement. This can be achieved if parents and teachers communicate with mutual trust, so as to facilitate the guiding of children. This has been investigated by AnispuSpita (2016) about the influence of the need to build communication on children's creativity.

Research Methods

The method used in this research is descriptive method with quantitative approach. Data collection techniques used were observation, interviews and documentation. The use of this descriptive method aims to obtain an overview of research subjects in the field, so that it will be known how the conditions and problems encountered. The quantitative data obtained are used as a reference to get the results of calculations. Using the Paired Sample T-Test Statistical Test using SPSS interpretation ver.17.

Research Subject

The research subjects were parents of year 2 students at Taman Sari 3 Yogyakarta

elementary school teachers with total of 35 respondents.

Data Collection Technique

The data taken is primary data by distributing questionnaires to parents of students twice, one before and the after one after using an Android-based application. The questionnaire filling is a tiered scale with a score of 1-4 (Likert Scale). This program was tested for 2 months (August – Sept 2019). From data obtained the questionnaire, it is analyzed to find out the extent of the benefits or influence of the quantity and quality of communication between teachers and students' parents.

Construct Validity Test

One of the requirements that must be met by the instrument (measuring instrument) is validity. According to Brown (1985) validity is the level of appropriateness of measuring tools to measure what should be measured, and to obtain information interpreted as achievements or characteristics. In this study, the questionnaire validity test of the quantity of parent and teacher communication, and parental supervision of their children's activities were carried out.

Reliability Test

Testing a measuring instrument (instrument) before use it needs to be tested for reliability

if the instrument can be trusted. Reliability is the consistency of measurement, or the degree to which an instrument measures the same way each time it is used under the same condition with the same subjects. A measure is considered reliable if a person's score on the same test given twice is similar.

Results and Discussion

Education is a shared responsibility between government, society, teachers and parents. The interrelation between cooperation and interaction in this relationship will produce a learning condition that makes childrens to get a conducive and healthy learning atmosphere. Parents and teachers have the same role and goals in terms of education, namely guiding, fostering, nurturing and leading, to make children become insightful people and to get them full life of happiness in the world and hereafter

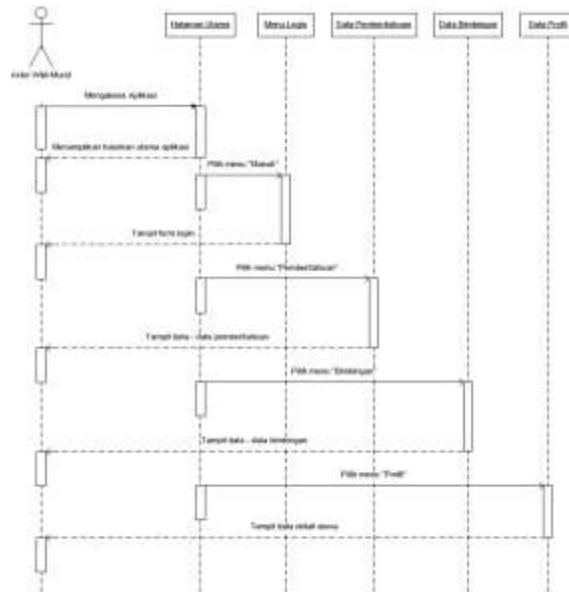
Sequence Diagram in Application Implementation

Sequence diagram is a form of message flow in each object, a picture that gives a detailed explanation of each use case. In this diagram it is explained that the vertical dashed line shows the flow of each object seen in a use case where as the horizontal line represents the object that is sending the message.

Sequence Diagram Client (Homeroom Teacher)

Homeroom can access the Android-based application in the form of the main page menu, student database, profile, conduct counseling guidance, record violations and guidance history data.

Fig.1. Sequence Diagram Client (Home Room Teacher)



Student List Menu

In the Student menu a homeroom teacher can manage pages such as editing and deleting data. Homeroom teachers are given facilities including a data filter column, a breadcrumb that serves to display student data that has been filtered, while student data to be displayed is entered in the data list column

Fig. 2. Student List Menu



Fig. 3. Consultation Menu



Consultation Menu

In the Consultation menu a question and answer process can be conducted between the teacher and the student's parents. Parents can send questions to teachers related to school activities, behavior, violations, and complaints about how to deal with their children when there are problems. Through this application parents can get answers directly from the respective teacher and records of all consultations are documented in full. Likewise, the problem of student commit violations in school, can be directly conveyed to their respective parents and all forms of violations will be recorded in full.

Fig.4. Violation Menu



A. System Testing

This system testing is done with the Black Box test model and Alpha test needed to test the feasibility of the system whether the system can run as expected.

B. Questioner Reliability Test

Before the questionnaire was distributed to the respondents, reliability as tested first. The reliability test aims to ensure that the variables data in the questionnaire are

reliable or not, which means it will remain consistent if repeated tests are carried out on the same respondent (subject).

The results of the comparative test of the questionnaire reliability with the Cronbach's Alpha test before and after using the Application with the comparison R table 0.396 as follows:

Table. 1. Reliability test table

Variabel	Pretest	Post test	Hasil (> 0.396)
Parent and teacher communication	0.755	.633	Realibility
Supervision of Learning in children	0.820	.820	Realibility

Table.1 shows that the Quisener's reliability test are reliable because the results of the calculation for the pretest and posttest for the question variable 'Communication of parents and teachers' and 'Supervision of Learning in Children' are greater than R Table (results > 0.396).

C. Test Application Usage

Testing the effect of parental supervision on the achievement of the results of daily tests of Mathematics using the T Test as follows:

Table 2. Characteristics of Paired Samples / Sample T

Paired Samples Statistics				
	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 pretest	7.5750	34	.34748	.06143
posttest	7.9953	34	.43037	.07608

Pretest Average Math value, worth 7.5750 with a standard deviation of 0.34748 while, the difference in the results between pretest and post test of the average value indicates that there is a correlation between changes in the daily value of Mathematics tests.

D. T Test To Determine The Use Of Communication Applications Of Teachers And Parents Of Students.

The influence of the use of communication applications that occur in their daily lives between parents and teachers can be made by making a hypothesis test H_0 and H_a . The provisions for drawing conclusions based on the decisions in the T test are:

- H_0 : If the calculated sig value < from the sig table (2-tailed 5%) then there is no effect of communication between teacher and student parents using an Android-based application
- H_a : if the sig value is > from the sig table (2-tailed 5%) then there is the effect of communication between the teacher and the student's parents using an Android-based application.

From the calculation results:

Table 3. Paired sample table

	Paired table :				t	df	Sig.(2-tailed)	
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower				Upper
Pretest komunikasi posttest komunikasi	-4.36294	3.98381	.62862	-5.40883	-3.27705	-4.231	33	.000

Looking at the calculation results from the table it shows that the value of sig (2-tailed) is smaller than < 0.05 . From these results it can be concluded that H_0 is rejected, which means the hypothesis that there is no effect of communication using the application. By accepting the hypothesis H_a shows that there is an increase in communication between parents and teachers after using an android-based communication application. By accepting the hypothesis H_a shows that there is an increase in communication between parents and teachers after using an android-based communication application.

In addition to testing the significance comparison (Sig), it can be done by testing the hypothesis with a paired sample t test, which compares the t-value from the T-test table and the results of the t-count value.

To determine whether the results of the hypothesis are accepted or not can be seen from the following provisions:

1. H_0 : If the value of t count $>$ t table, it means reject H_0 and accept H_a
2. H_a : If the value of t count $<$ t table means accepting H_0 and rejecting H_a

From Table.3. it can be seen that the t value is -8.231, the minus (-) value indicates that the average value of parents communicating with the teacher before using the application is lower than after using the application. The

value of t calculation is obtained from the number of respondents' data $N = 35$ and the degree of freedom $df = 33$ with a significance value $(\alpha / 2) = 0.025$, the t value obtained from the distribution table is 2.03693. The results of the t table compared with the calculated value $8.231 > 2.03693$, it can be concluded that H_a can be accepted by rejecting H_0 . Receiving H_a means that it is true that there is an influence of communication between parents and teachers or it can be shown that the average communication before and after using an Android-based application is indeed a difference.

By the same calculation, the influence of parents' attention on their children is obtained t arithmetic $t = 6.124$ and the value of t table = 2.03693. The calculation results show that $t \text{ arithmetic} > t \text{ table}$, which means H_0 is rejected with the hypothesis that there is no influence of parents' supervision of their children using an Android-based application. From this calculation, it was concluded that H_a was accepted, which means that by using this Android-based application, parents pay more attention and care for the children behavior, activities and character. From the calculation results it can be seen that the use of quantitative communication applications is more

increased, making children more diligent in learning as indicated by the increase in daily results of Mathematics and children having better character since they are always under the supervision of teachers and parents every day.

Conclusion

By utilizing this Android-based application makes communication between parents and teachers more intensive. Parents of students get information in real time since parents can monitor the learning process and activities in the school. Teachers can convey students infringement information to their respective parents directly without fear, so parents trust the school more. This trust is realized as a result of better communication and more intensive parental supervision of their children. By using the t test, the comparison of the calculated value and table is $8.231 > 2.03693$, so that the decision to reject the hypothesis H_0 is obtained. Meaning that there are differences in the quantity of communication before and after using an Android-based application. The quantity of communication impacts the comfort of the children in learning, parental supervision is more intensive, the children becomes more disciplined, children do not commit violations because they feels that

they are always supervised by their parents and teacher. This change will certainly make the children have better character. Including increasing learning achievement, which is indicated by the increase in the average value of Mathematics tests from 7.57 to 7.99.

Suggestion

The application needs to be developed by adding photos and video facilities so that parents can see directly the events clearly without any misperception. Daily test score results can be recorded so parents can monitor their child's test results or get their daily report. Applications need to be developed so that they can make announcements collectively (groups).

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