**Journal of Primary Education**
8 (3) (2019) : 270 – 280

https://journal.unnes.ac.id/sju/index.php/jpe/article/view/26955

# Development of Interactive Multimedia on Ablution and Prayer Learning to Introduce Religious and Moral Values for Kindergarten

**Sri Chomariyah[1]✉, Fakhruddin[2] & Supriyadi[2]**

[1] Islamic Preschool Al-Azhar 22, Semarang, Jawa Tengah, Indonesia
[2] Non-formal Education, Universitas Negeri Semarang, Indonesia
[3] Physical Education, Universitas Negeri Semarang, Indonesia

## Article Info

*History Articles*
Received:
September 2018
Accepted:
October 2018
Published:
December 2019

*Keywords:*
*ablution,*
*kindergarten,*
*moral values,*
*multimedia interactive learning,*
*prayer*

DOI
https://doi.org/10.15294/jpe.v8i3.26955

## Abstract

The purpose of this research is to develop interactive multimedia learning to introduce religious and moral values (prayer and ablution) for kindergarten. Multimedia forms in compact disk (CD) format. This research method is research and development. The subjects of this research were 47 students of kindergarten. The results of the research have been developed by Interactive Multimedia Learning in kindergarten students with good categories according to expert validation and suitable for learning. Based on t-test obtained $t_{value}$ is smaller than $t_{table}$ = 0.05 which shows that the implementation of Interactive Learning Ablution and Prayer Multimedia can significantly introduce religious and moral values. By implementing CDs on learning students can get to know the stage of ablution and prayer and practice them. In practice there are still difficulties experienced by student. In ablution activities that is when washing feet and prayer activities while sitting between two prostrations.



✉ Correspondence address:
WR. Supratman, Gisikdrono, Semarang, Jawa Tengah, 50149
E-mail: chomariyahcom@gmail.com

p-ISSN 2252-6404
e-ISSN 2502-4515

## INTRODUCTION

Permendikbud No. 137 of 2014 concerning the National Standard for Early Childhood Education related to the Standards of Child Development Achievement Level, hereinafter referred to as STPPA, is a criterion of abilities achieved by children in all aspects of development and growth, covering aspects of religious and moral, physical-motoric, cognitive, language, social aspects emotional, as well as art. The development of early childhood abilities can be developed through optimal and sustainable development efforts that will print the golden generation in the 30 years that come.

Related to the development of early childhood education, an educator plays an important role in creating an atmosphere of active, creative and fun learning. The choice of methods and strategies, as well as learning media, is very important to be done so that the learning process is carried out optimally. This is because children now receive various information media faster. Therefore teachers also develop technology-based learning models with a variety of technological developments that will be needed by educators and parents fully to the selection of appropriate playing and learning media for early childhood, so that it will optimize aspects of child development. Interactive learning at the present time that attracts children's interests is always associated with educational game applications. One of them is through internet access. Astuti (2009) states that the internet is a new mode of distribution of information and knowledge. Access to this network is currently a trend. Of the phenomena that occur also have a major effect on child development. Positive or negative impacts can occur. Here is the role of parents as a companion to direct children.

The role of teachers and parents in introducing religious and moral values in learning ablution and prayer is necessary because it can justify the movements of the ablution and prayer orders that are not true to students in the learning process. The teacher acts as a role model and at the same time models when imitating ablution and prayer movements. The learning process to produce the best quality requires an unconventional method. One to solve conventional problems the teacher must be able to present learning media. The role of parents is as a companion to direct children when running interactive games and justify children's learning styles in teaching the movements of the ablution movements and praying at home. This is supported by Manikowati (2016) that with regard to the media used, multimedia and games, it is better for teachers to increase their teaching with the media while teaching students who have learning styles, especially to students with visual learning styles.

Teaching the movements of the sequence of ablution movements and praying to recognize religious and moral values from an early age is very important. Religious and moral values education is a solid foundation and very important in its existence, and if it is embedded from an early age, this is a good start to continue the next level. As explained by Ali (2014) the cultivation of religious values is an effort to introduce and teach the essence of religious teachings to children so that they can know and understand them which will later familiarize themselves to carry out the teachings of the religion. In line with what is explained Bariyyah (2016) moral and religious development is carried out every day, every week, every month and every semester.

In the Word of God the Quran the Letter of Al Maidah verse 6

يَا أَيُّهَا الَّذِينَ آمَنُوا إِذَا قُمْتُمْ إِلَى الصَّلَاةِ فَاغْسِلُوا وُجُوهَكُمْ وَأَيْدِيَكُمْ إِلَى الْمَرَافِقِ وَامْسَحُوا بِرُءُوسِكُمْ وَأَرْجُلَكُمْ إِلَى الْكَعْبَيْنِ ۚ وَإِنْ كُنْتُمْ جُنُبًا فَاطَّهَّرُوا ۚ...

"O ye who believe! when ye prepare for prayer, wash your faces and your hands (and arms) to the elbows, rub your heads (with water) and (wash) your feet to the ankies..." The verse explains that before praying, you should do ablution first.

In the Word of God (Q.S. Luqman: 17)

يَا بُنَيَّ أَقِمِ الصَّلَاةَ وَأْمُرْ بِالْمَعْرُوفِ وَانْهَ عَنِ الْمُنْكَرِ وَاصْبِرْ عَلَىٰ مَا أَصَابَكَ ۖ إِنَّ ذَٰلِكَ مِنْ عَزْمِ الْأُمُورِ

"O my son, establish regular prayer, enjoin what is just and forbid what is wrong, and bear with patient constancy whatever betide thee, for these is firmness (of purpose) in (the conduct of) affair.

The means or media to introduce the appropriate sequence of ablution and prayer movements for early childhood is to use interactive multimedia. Research conducted Liu (1996) which examines the ability to create contextual learning that is more realistic through different media and allows children to be more controlled, interactive multimedia can create an effective learning environment for students. Interactive multimedia can be useful because it provides material for real-world objects and through the interaction of several senses. This is similar to research Willis, et al. (2014) that technology tools can be used to motivate students in early childhood development programs to engage in activities that will help them deal with environmental problems around them.

Based on this theory before understanding receiving the material, students are first given a way to operate the computer from the beginning to the end. After knowing how to operate students, participants become proficient in applying the material. Technological progress has been integrated into various fields, including in the field of education, especially for education in schools and learning in classrooms conducted by teachers and students. As explained Nora (2008) The development of 2D animation media techniques can show children to learn the steps to pray to be applied in daily life how to pray. From knowledge, children can learn through books or media. Interactive Learning Multimedia (MPI) is very important for its existence to be used by schools because the limitations of teachers cannot bring interesting media related to learning religious and moral values. For example, children only begin to imitate the worship movement in the correct order orally without the help of the media.

Purwanto (2016) revealed to his research that animation provides a clear picture of the message of character, this animation also contains interesting and fun content. In line with what was revealed Suparni (2016) stated that Information Technology as an auxiliary tool in the learning process. Multimedia animation as part of Information Technology supports learning. Multimedia animation gives a pleasant impression of helping the learning process in remembering it. This was also explained by Suyanto, et al. (2012) Interactive CD learning can achieve learning completeness, so it can be said that interactive CD learning is feasible and effective in improving student learning outcomes. Based on some of these opinions stated using interactive multimedia that is favored by students and very effective can increase understanding and recognize religious and moral values (ablution and prayer) for early ages. Interactive multimedia learning is able to combine animation, music, images, videos that students like to improve the quality of an understanding material. Imitating the worship movement in the right order, especially ablution and prayer by using Interactive Learning Multimedia (MPI) is one of the materials that will build the religious and moral values of early childhood, especially in imitating ablution and prayer movements.

Preliminary observation data related to learning religious and moral values especially imitating worship movements (ablution and prayer) in the correct order in kindergarten obtained data that 83.3% of teachers gave learning activities imitating ablution and prayer movements were still conventional and only partially 16.7 % of which is through Interactive Learning Multimedia (MPI). The teacher is still conventional because the media is still in the form of playing picture cards, playing pat and directly practicing ablution. Whereas for prayer activities are still imitating the movements of adults and some teachers still do not utilize interactive multimedia. As for learning about ablution and prayer, there is still a lack of shops selling interactive CDs for children. In stores, the number of available prayer learning CDs is for the average adult.

The purpose of this research was to describe the types and uses of media in ablution and prayer to introduce religious and moral values in kindergarten, formulate the design of interactive learning multimedia development of ablution and prayer to introduce religious and moral values, produce interactive multimedia learning ablution and prayer for the recognition

of religious values and effective moral for use in kindergarten.

## METHODS

This research method uses Research and Development. This method is a research method used to produce certain products and test the effectiveness of the product. This method can be used for learning in kindergarten. According to Sugiyono (2013) the stages of the research method are as follows: (1) potential and problems, (2) data collection, (3) product design, (4) design validation, (5) design revision, (6) product testing, (7) product revision, (8) usage test. The stages of research and development as in Figure 1.

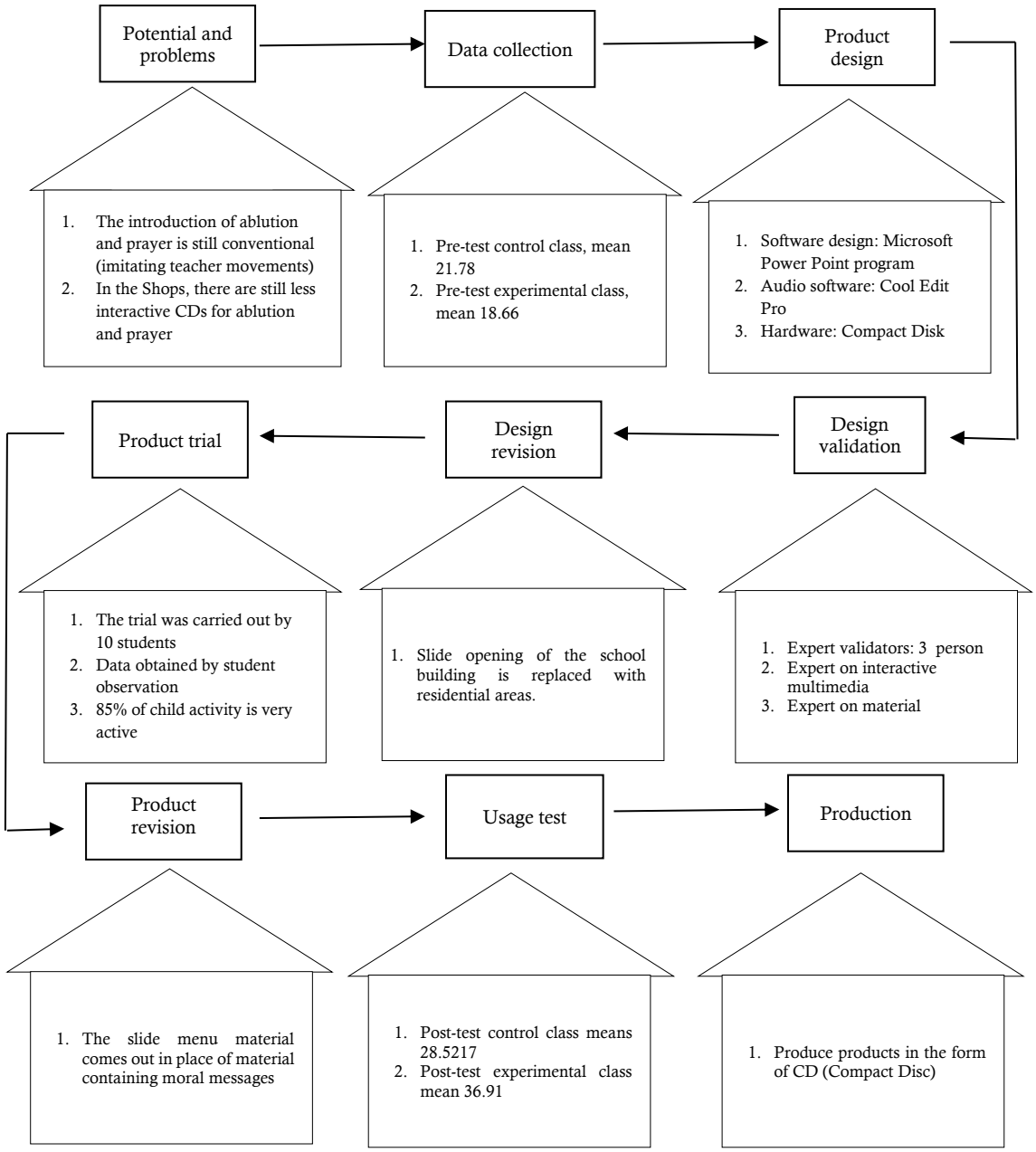



**Figure 1**. Stages of Research and Development

## RESULTS AND DISCUSSION

### Potential Stages and Problems

Potential stages and problems in the development of interactive learning multimedia in the introduction of religious and moral values (ablution and prayer) is a learning design that the author designs with reference to various methods and designs of learning media. As for the reference of interactive multimedia learning in the introduction of religious and moral values (ablution and prayer) is the first, initially still using the conventional method of taping ablution, imitating the teacher's movements to sequence ablution movements, playing with media images of ablution movements. Second, using picture or book media to introduce the prayer movement and imitate the prayer movement by playing the picture of the prayer sequence. Third, imitating the teacher's movement to perform classical prayer movements starting from the first takbirotul ihrom movement to greetings. In the opinion of Santrock (2002) Social learning theory, sure that someone learns by observing what others do. Through observing learning (also called "modeling" or "imitation"), a person, cognitively, displays the behavior of others and then adopts the behavior in himself. For example, early childhood observes imitating the ablution and prayer movements of their teachers; when observed together the early childhood behavior style shows the same characteristics as the style of behavior of the teacher. Fourth, children's interactive learning CD about ablution and prayers in shops are still not developed from those already in existence. CD is still widely available for learning ablution and prayer for adults.

Based on several considerations of these weaknesses, the authors in this research designed an interactive multimedia learning design to introduce religious and moral values (ablution and prayer). This focuses on the latest model innovations to introduce the sequence of ablution and prayer through interactive multimedia learning.

### Data Collection Stages

The research was conducted at Al Azhar 22 Islamic Kindergarten Semarang. The pre-test was carried out in control group B2 group and experiment group B3 class. In the first stage, the teacher gave apperception after giving an explanation of the material to be submitted containing the sequence of ablution and prayer movements, the next step the question and answer teacher gave questions about ablution material and prayer which was intended as a pre-test. In the control class, the implementation of the learning process does not use interactive multimedia learning. While the implementation of the experimental class is the B3 group in delivering material with interactive multimedia learning.

The development of children's learning outcomes about ablution and prayer in the control class with a number of 23 children, for pretest, mean 21.78, the standard deviation of 4.83. The development of children's learning outcomes about ablution and prayer in the experimental class with the number of 24 children, for pretest, mean 18.66, the standard deviation of 5.64.

After the researchers made observations in the field, got an idea of how the teacher tried to develop the process of learning ablution and prayer. Interactive multimedia learning that is designed, created and developed according to the conditions of the field needs, so that this product is expected to be used to support the teaching and learning process in a sustainable manner.

### Product Design Stages

Determination of the model is adjusted with the aim to deliver audio-visual material to students. In choosing this model using interactive multimedia learning in the form of software or hardware. The advantage of this media is that students can be more active with educational games through animations, videos, sounds, and images. Compilation of multimedia formats for interactive learning, including determining software applications, background, color selection, basic layouts, animations, videos, music, and images. This type of software used in

operationalizing this interactive multimedia learning uses Microsoft PowerPoint.

Feedback

At the feedback stage, it is needed in drafting multimedia products to find out the students' response and it is hoped that learning will succeed. At the feedback, the stage is very needed in the preparation of the draft multimedia products to find out the response of students and it is hoped that learning will succeed. By giving this praise apperception, it is hoped that it will make students happy and motivate in learning activities. If the answers of students are not correct, then the voice of "sorry repeat again" will come out, "sorry is not true", "try again". The use of this sentence is expected not to discourage children but still try again to answer correctly. This feedback is in the game menu or interactive game to create a response stimulus and there is a feedback. Here's Figure 2. Cool edit pro how to record the narrator's voice into a child's voice.

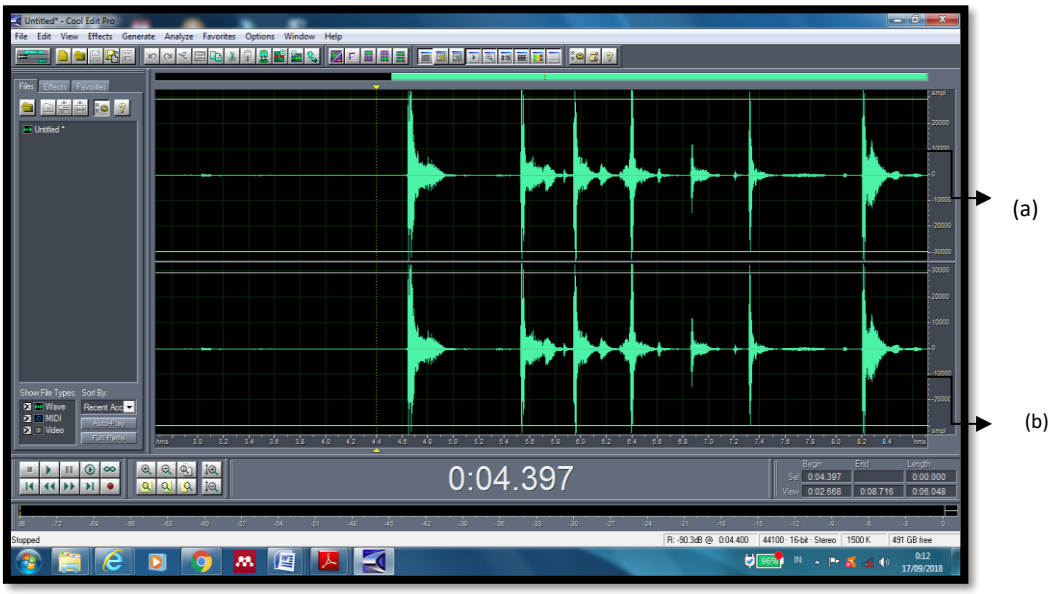



**Figure 2**. Cool Edit Pro

Information:
a. Voice recording entered
   Sound recorded through the recording
b. Sound recording results
   Recordings that are ready to be stored and can be changed according to the sound effect as desired. For example, children's voices or larger voices.

**Graphic Components**

Color

This interactive learning multimedia uses primary and secondary colors that are predominantly yellow and blue. Because of the material about ablution and prayer, the meaning of yellow gives a sense of happiness as if it wants to create a feeling of wanting to play, be passionate and cheerful. While the blue color can stimulate clear thinking and increase the concentration.

Letter

In this interactive learning multimedia application dominated using Comic Sans MS letters that are simple, interesting and easy to understand by students.

Picture

The selected image is made interesting and not boring for students. The image is expected to provide an overview related to other material.

Cursor

The cursor in this application is in the form of a hand drawing when touching a learning object. The cursor is shaped like a child when it does not touch the learning object. The cursor

works to run the application that we want by using the help of a mouse or facility instead of the mouse. The following is an example of ablution slides in Figure 3.

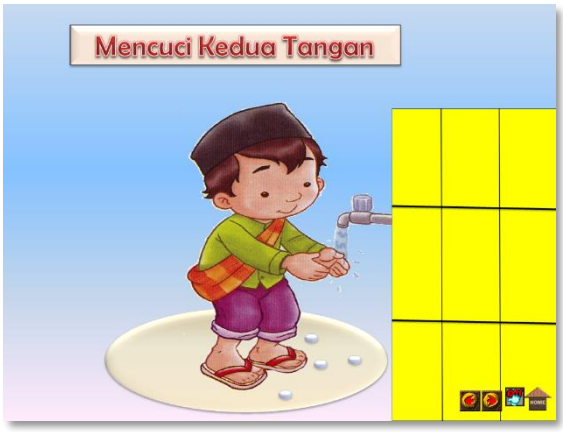



**Figure 3**. Examples of Ablution Learning Slides

The following is an example of a prayer learning slide in Figure 4.

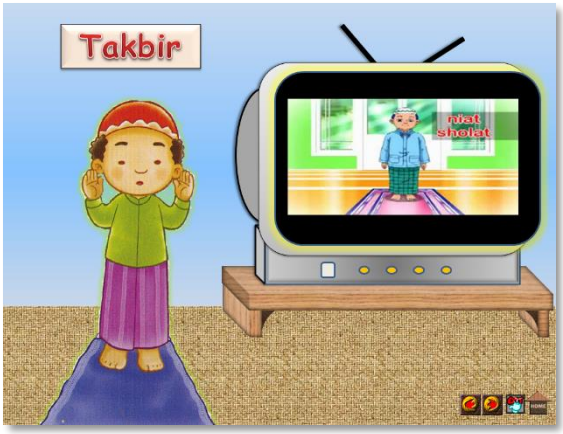



**Figure 4**. Sample Slide Learning to Pray

**Audio Components**

This audio component has a voice supporting narrator (researcher) that serves to deliver learning material, questions, and responses to students' answers when playing.

**Video Components**

This video component serves to support and clarify the appearance of the material. This type of video is adapted to prayer and daily prayer material, so students can concentrate on learning.

**Interactive Multimedia Design**

This interactive learning multimedia application is opened with the initial title "Belajar wudhu dan Sholat, Yuk!" TK kelompok B Semester I. In the first display menu is accompanied by voice recordings of narrators and animated images of clouds, plants and the atmosphere of residential areas close to the mosque. After the next slide's main menu is the options menu view.

This is as explained by Rochmawati, et al. (2017) through games can improve children's collaboration skills, so that children can develop emotional social skills, especially in learning activities by playing. For more details, the order of appearance and use of interactive multimedia can be seen in Figure 5.

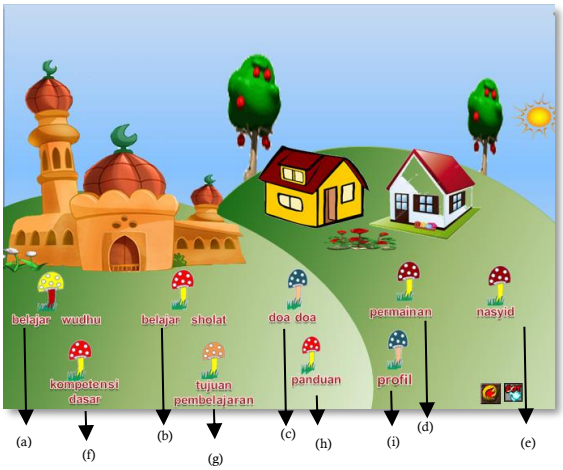



**Figure 5**. Use of Interactive Multimedia

Information:
a. Learn ablution
b. Learn to pray
c. Prayers
d. Game
e. Nasyid
f. Basic competencies
g. Learning objectives
h. Guide
i. Profile

**Design Validation Stages**

The products developed need to be validated by experts in accordance with the research, to obtain opinions, input and assessment of the products produced. The initial step in this validation stage is to request a review of the advice of the material expert before asking for the validation. The purpose of this validation is to get quality learning multimedia products that

are feasible to be applied in the learning process. input and advice from experts are very valuable as a first step so that researchers get an overview of what interactive multimedia products are for early childhood.

The instruments used in the expert assessment are rating scales with intervals ranging from 1 to 4 consisting of 10 items and row columns to write comments and suggestions for better interactive multimedia improvements. The following information rating scale: 4 = Very good, 3 = Good, 2 = Good enough, 1 = Not good.

The following is Table 1 about the results of the expert's assessment of the material.

**Table 1**. Results of Expert Assessment of The Material

| Validator | Assessment | Maximum score | Criteria |
|---|---|---|---|
| Validator I | 36 | 40 | Good |
| Validator II | 39 | 40 | Good |
| Validator III | 31 | 40 | Good |

The following is Table 2. About the results of an expert assessment of interactive multimedia

**Table 2**. Results of Expert Assessment of Interactive Multimedia

| Validator | Assessment | Maximum score | Criteria |
|---|---|---|---|
| Validator I | 39 | 40 | Good |
| Validator II | 39 | 40 | Good |
| Validator III | 33 | 40 | Good |

The results of the assessment in Table 2, show that the three validators provide values with good criteria with unequal assessment results. Based on Table 2, it is shown that the feasibility aspects of image, video, and animation conformity are stated according to the learning indicators by all validators with an average value of 4. The value of 4 is the highest value of scale 4 which states the category is very good. This means that multimedia interactive learning developed is very in accordance with learning outcomes, especially for ablution and prayer.

**Design Revision Stages**

Based on the review, input and comments from expert validators regarding the product design developed, the revisions were made. Before the design revision was seen, it was the school building. After being given input from the school building, the settlement is replaced. Next one example of the design revision can be seen in Figure 6.

**Product Trial Stages**

In the Product Trial carried out this small group, trial aims to determine the response of problems and obstacles to interactive multimedia. This trial was conducted on students in small groups in the number of 10 students. Collecting information about students' responses to learning through observation while participating in learning activities to get input into interactive multimedia applications. Then revisions are made according to suggestions and input. The percentage value of children's learning activities is 85% in the category of very active children.

The initial menu entry section for the form of the building is replaced by a house or settlement.

(Before revision)


(After revision)

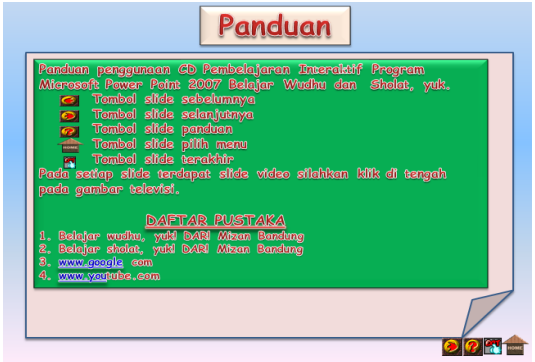

**Figure 6**. Revision After Validation

**Product Revision Stages**

In product revision stage, the display appears to exit the menu or exit the previous main menu selection, the guide display, but from the input, it should be a stand-alone slide containing moral messages for early childhood. Following is Figure 7, product revision.

The appearance for exit is a stand-alone moral message instead of a slide.

(Before revision)




(After revision)


**Figure 7**. Product Revision

**Usage Test Stages**

The development of children's learning outcomes about ablution and prayer in the control class with a total of 23 children, for pre-test, mean = 21.78, standard deviation = 4.83 and post-test mean = 28.52, standard deviation = 4.14. The development of children's learning outcomes about ablution and prayer in the experimental class with a number of 24 children, for pre-test, mean = 18.66, standard deviation = 5.64 and post-test mean = 36.91, standard deviation = 3.90.

The data normality test results show that the value of sig = 0.512. When compared with $\alpha = 0.05$, sig = 0.512 > $\alpha = 0.05$. Based on the rules of rejection and acceptance of a hypothesis, $H_0$ is accepted. This shows that the development of moral and religious values (ablution and prayer) of the control class and experimental class comes from populations that are normally distributed.

Based on the homogeneity test obtained a significant value of 0.842. If the sig value is compared to $\alpha = 0.05$ then sig = 0.842 > $\alpha = 0.05$. Based on the rules of rejecting and accepting hypotheses, $H_0$ is accepted. This means that the variance in the development of religious and moral values (ablution and prayer) is the same or homogeneous class of control and experiment.

So the effectiveness of product trials is obtained by P-value $t_{value}$ sig. (2.tailed) of 0.000 < 0.05, then $H_0$ is rejected. This means that there is a difference between the average post-test of the control class and the post-test of the experimental class. In the group statistics table, mean for the post-test control class is 28.5217 and for the post-test experimental class is 36.9167, meaning that the average post-test of the experimental class is higher than the control class post-test.

**Production Stages**

At this last stage, researchers are ready to produce interactive multimedia test results into CD (Compact Disk) forms that are ready to be reproduced. Based on some data obtained using interactive multimedia that is favored by students and very effective it can improve understanding and recognize religious and moral values (ablution and prayer) in kindergarten. Interactive multimedia learning is able to combine animation, music, images, videos that students like to improve the quality of understanding material.

But this research has limitations in making interactive multimedia: (1) the motion of the

image animation has not been smooth, (2) it takes a long time to set the image design and appearance, (3) it takes a long time for the narrator's voice record to be made into a child's voice

The difference between this research between previous studies is: (1) there is a strengthening of reward and punishment stimulus for students when running on the game menu, (2) there is reinforcement or strengthening of ablution material and prayer for early childhood, (3) there are other menu choices that support learning materials, namely daily prayers and Islamic songs, (4) media learning religious and moral values (ablution and prayer) for early age as part of fundamental Islamic religious teachings.

Based on the Kognitf Theory according to Jean Piaget interactive multimedia learning in the introduction of religious values and moral ablution and prayer is precisely applied in the Pre-operational Period (2–7 years). At this time a child has the ability to use symbols that represent a concept.

## CONCLUSION

The results of this research include the type of research and development in developing a product in the form of interactive multimedia. Based on the results of the research it can be concluded that with interactive multimedia as one of the alternative media developed to introduce material religious and moral values (ablution and prayer) that are interesting, fun, innovative and interactive. This is indicated by the development of interactive CD products.

The development of interactive learning multimedia in the introduction of religious and moral values (ablution and prayer) can be designed with the preparation of interactive multimedia learning formats, including the determination of software applications, background, color selection, basic layouts, animations, videos, music, and images. This type of software is used in operationalizing this interactive multimedia learning using the Microsoft PowerPoint Program.

The validity of interactive multimedia learning in the introduction of religious and moral values (ablution and prayer) is shown from the results of the expert validator in the field of material with an average of 35.33 and a maximum score of 40. While the expert validator in the field of interactive multimedia with an average score of 37 with a maximum score of 40. The effectiveness of learning in the introduction of religious and moral values (ablution and prayer) is shown from the results of the experimental class assessment. The average pretest score was 18.667 and after receiving the material with interactive multimedia learning the posttest score experienced an increase of 36.917.

Early Childhood Education teachers are expected to be able to implement interactive multimedia development not only in their own themes, my environment, my needs, animals, plants, recreation, work, communication tools, my homeland but also on the material of religious and moral values (ablution and prayer).

## REFERENCES

Ali, M. S. (2014). Penanaman Nilai-nilai Agama pada Anak Usia Dini di R.A DDI Addariyah kota Palopo. *Al-Qalam: Jurna Pendidikan Anak Usia Dini*, 20(2), 197-210. Retrieved from https://www.researchgate.net/publication/326779598_penanaman_nilai-nilai_agama_pada_anak_usia_dini_di_ra_ddi_addariyah_kota_palopo

Astuti, B. R. T. (2009). Dampak Komputer dan Internet pada Perkembangan Anak. *Jurnal Speed - Sentra Penelitian Engineering dan Edukasi*, 1(1), 16-19. Retrieved from http://ijns.org/journal/index.php/speed/article/view/1347

Bariyyah, K. (2016). Assessmen Perkembangan Moral Agama pada AUD: Studi di TK ABA Pajangan Berbah Sleman. *Al Athfal: Jurnal Pendidikan Anak*, 2(1), 29-42. Retrieved from http://ejournal.uin-suka.ac.id/tarbiyah/index.php/alathfal/article/view/1225

Liu, M. (1996). An Exploratory Study of How Pre-Kindergarten Children Use The Interactive Multimedia Technology: Implications for Multimedia Software Design. *Journal of*

*Computing in Childhood Education*, 7(1–2), 71-92. Retrieved from https://eric.ed.gov/?id=ED396713

Manikowati., & Bharati, D. A. L. (2016). The Effectiveness of Multimedia in Teaching Writing to Students with Different Learning Styles. *English Education Journal*, 7(2), 85-91. Retrieved from https://journal.unnes.ac.id/sju/index.php/eej/article/view/15730

Nora. (2008). *Learning Sholat for Children 6 to 12 Years Old using 2D Animation*. Malaysia, Melaka: Universitas Teknikal.

Purwanto, E., & Yuliana, M. E. (2016). Penerapan Animasi Pertunjukan Wayang sebagai Media Pendidikan Budi Pekerti dan Memperkenalkan Budaya Bangsa kepada Anak Usia Dini. *Jurnal SAINSTECH Politeknik Indonusa Surakarta*, 1(6), 21-31. Retrieved from http://www.poltekindonusa.ac.id/wp-content/uploads/2017/01/Artikel-4_Jurnal-Sainstech_Vol-1-Nomer-6-Desember-2016_Eko-Purwanto.pdf

Rochmawati, I., Sutarto, J., & Anni, C. T. (2017). Pengembangan Model Cooperative Learning Melalui Chained Games untuk Meningkatkan Kemampuan Kerjasama Anak Usia 5-6 Tahun Abstrak. *Journal of Primary Education*, 6(2), 147-158. Retrieved from https://journal.unnes.ac.id/sju/index.php/jpe/article/view/17568

Santrock, J. W. (2007). *Perkembangan Anak*. Jakarta. Erlangga

Sugiyono. (2013). *Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta.

Suparni. (2016). Metode Pembelajaran Membaca Doa Berbasis Multimedia Untuk Anak Usia Dini. *Indonesian Journal on Software Engineering,* 2(1), 1-8. Retrieved from https://ejournal.bsi.ac.id/ejurnal/index.php/ijse/article/view/668

Suyanto, Sopyan, A. & Sudarmin. (2012). Pengembangan Pembelajaran CD Interaktif untuk Meningkatkan Hasil Belajar Mata Pelajaran PAI pada Peserta Didik. *Innovative Journal of Curriculum and Educational Technology,* 1(2), 100-107. Retrieved from https://journal.unnes.ac.id/sju/index.php/ujet/article/view/835

Willis, J., Weiser, B., & Kirkwood, D. (2014). Bridging The Gap: Meeting the Needs of Early Childhood Students by Integrating Technology and Environmental Education. *International Journal of Early Childhood*, 2(1), 140-155. Retrieved from https://eric.ed.gov/?id=EJ1108056