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Determining cognitive and affective aspects of ablution lessons synchronized with English language learning using total physical response methods as multimedia learning parameters for Islamic kindergarten

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Abstract. Building multimedia learning as a tool in the learning process must also consider the cognitive and affective aspects. Determine cognitive and affective aspects adjusted to the age level of students. Therefore, learning content will have cognitive and affective aspects that are adjusted to the age level of students. In this research will be found cognitive and affective aspects of the learning content that will be loaded into the content of a multimedia learning. The cognitive aspects and affective aspects will be obtained from the results of the synchronization of two lesson content possessed by Islamic Kindergarten schools using the Total Physical Response Method. Based on the cognitive and affective aspects of the learning content obtained, therefore, the result will be used as a reference to determine the multimedia parameters to be built.

1. Introduction

Cognitive and affective aspects are influenced by the segmentation of a person's age. Between children, adults, and parents will be different. Even at the age of children there are also differences in segmentation between early childhood and children of elementary school [1].

In building a multimedia learning, cognitive aspects and affective aspects must also be of particular concern. Based on the condition of students who have great attention to the spatial component in a multimedia learning [2], hence the cognitive and affective aspects of a lesson content are implemented in an image form in a multimedia learning. This is done so that the cognitive and affective aspects are easily achieved by students.

In this research, cognitive aspects and affective aspects will be determined. Synchronization on the lesson content of Islamic kindergarten school, namely religious lesson, especially ablution lesson and English lessons. Synchronization of two lesson content is very effective, because it will result the modalities needed for multimedia learning [3].

Based on these cognitive and affective aspects, number of parameters will be found which will be used as a reference in the content of a multimedia learning.



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2. Literature review

2.1. Cognitive theory

At Indonesia, kindergarten students aged between 5-7 years [4]. Kindergarten students are still classified at an early age and golden year. Therefore, the cognitive level of kindergarten students is the ability to understand the surrounding environment to increase their knowledge by interacting with surrounding people, animals, plants, and nature [5].

Then the development of intelligence is actually influenced by two main factors, namely heredity and environment. The influence of both of factors is actually not separate, but it is often the result of the interaction between of both of factors.

2.2. Affective theory

There are two factors related to affective assessment that must be assessed. First, the affective competencies to be achieved in learning include the level of response, appreciation, assessment and internalization. Second, the attitudes and interests of students towards lesson and the learning process. In the learning process there are four types of important affective characteristics namely attitudes, interests, self-concepts and values [6].

Today there are a lot of online learning. However, there is an imbalance between the achievement of the cognitive and affective domains. The result of imbalance will only have a negative impact. The point is that the importance of affective learning in "full human development" can no longer be ignored on 21st [7].

2.3. Ablution

Ablution is an activity that must be carried out by Muslims as a form of worship in order to be clean. Ablution itself is sometimes done when praying. Ablution itself basically consists of 13 sequences [3], but in this research 7 sequences will be used assuming that ablution uses tap water.

2.4. Total physical response

James Asher's is a professor of psychology from San Jose University, California, who first introduced the method of total physical response. This method is a language learning method based on coordination of speech and action. Total Physical Response methods is a method that performs a language learning by using physical movements to react to input orally in order to reduce obstacles and reduce student affective. Direct pronunciation in children will respond to the physical before they begin to produce verbal responses. This method emphasizes more on body movements in the learning process, so that to further improve understanding of the material can be assisted with media images in accordance with the theme.

2.5. Multimedia learning

Multimedia is an application that has multiple modalities, such as text, images, drawings, graphics, animation, sound (including speech), and many more related to interactive things. Understanding of multimedia learning is how an educator utilizes a multimedia in a learning.

Multimedia learning is an application that is used for learning activities. In his writing, Richard E. Mayer writes that building a multimedia learning can follow 12 principles of multimedia learning. These 12 principles can then be used as references by researchers in building multimedia learning.

3. Research method

The scope of this research consists of several fields of science that are studied in accordance with the literature studies that have been described. The algorithm created is as shown in Fig 1, as follows:

- Determine the baseline order of ablution
- Determine the media for taking water

- Determine the Cognitive Aspects of ablution Lesson and Cognitive Aspects of English Language Content.
- Determine the Affective aspect of content of 2 in 1.
- Set Total Physical Response
- Design of Multimedia learning

After finding the required multimedia learning components, the next stage of the experiment will determine the parameters of multimedia learning based on cognitive aspects and affective aspects of the contents of ablution lessons and the contents of English lessons. The algorithm created is as shown in Fig 2, as follows:

- Calculate the number of cognitive aspects of ablution lesson content
- Take data on cognitive aspects of ablution content
- Take data on cognitive aspects of English language content
- Take the affective aspect data 2 in 1 lesson content
- Retrieve data on multimedia learning components
- Determine Multimedia Learning Parameters
- Repeat Steps 2 through 6, until they fulfill the cognitive aspects of ablution lesson content

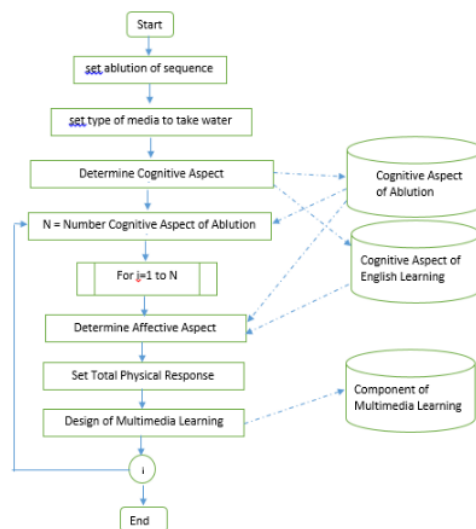


Figure 1. Flow chart determines cognitive and affective aspects of ablution content and English.

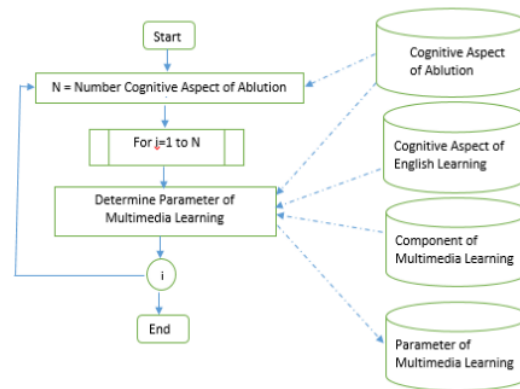


Figure 2. Flow chart determines the parameters of multimedia learning based on cognitive aspects and affective aspects of abluion lesson content and the content of English lessons.

4. Finding and discussion

Based on the six stages have done in the research that refer to algorithm of figure 1, some data were produced as shown in Table 1, as follow:

- Cognitive aspects of abluion lesson content
- Cognitive aspects of English language content
- Physical response
- verbal response
- Response to action
- Components of multimedia learning

On table 1 it is shown that synchronization of cognitive aspects that have been determined in two lesson content using the total physical response method can be used as a reference for multimedia learning design that produces multimedia learning components.

Table 1. Results of experiments based on flowchart in Figure 1.

No	Cognitive Aspect Of Ablution Content	Cognitive Aspect Of English Content	Total Physical Response	Component of Multimedia Learning
1	Students Know the Sequence of Ablution	1.Students know the English sentences on the sequence of abluion 2.Students Know vocabulary in the English sentences on the sequence of abluion	1.Verbal response to each abluion sequence 2.Action Response to each abluion sequence	1. Ablution sequence page 2. The page of word description of abluion sequence 3. Image 4. Sound 5. Evaluation of the implementation of abluion sequence
2	Students know procedure of abluion	Students know vocabulary for each Physical Response on the procedure of abluion	Physical response to the procedure of abluion	1. The word page for every physical response to the procedure for abluion 2. Animated scenario of each abluion sequence 3. Evaluation of the implementation of the abluion procedure

Table 1. Cont.

3	Students know the water used for ablation	Students know the vocabulary related to water, origin, and media	-	1. Word page as a description of water, origin, and media 2. Evaluate the type of water that is suitable for ablation
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The next research activity was to determine the affective aspects of the combination of two ablation lessons and English. Affective aspects that have been obtained are used to determine the multimedia learning parameters based on the learning multimedia components that have been generated as shown in table 1.

The parameters of multimedia learning are generated based on cognitive aspects and affective aspects of ablation lesson content and English language content by synchronizing it using the total physical response method. The results of research shown in table 2.

Table 2. Multimedia learning parameters based on cognitive aspects and affective aspects of ablation lesson content and content of English language lessons results of experiments based on flowchart in Figure 1.

No	Cognitive Aspect Of Ablution Content	Cognitive Aspect Of English Content	Affective Aspect (2 in 1)	Parameter of Multimedia Learning
1	Students Know the Sequence of Ablution	1. Students know the English sentence on the sequence of ablation 2. Students Know vocabulary in the English sentences on the sequence of ablation	Discipline in the applying the sequence of ablation	1. Scenarios for each ablation sequence are made per-page 2. Draw of each ablation sequence 3. The sound of mentioning information on ablation pictures 4. Word for ablation sequence 5. Scenario of evaluation from initial for finish 6. Next sequence evaluation scenario
2	Students know procedure of ablation	Students know vocabulary for each Physical Response on the procedure of ablation	Response of seriousness in carrying out the correct procedure of ablation	1. Image for each physical response 2. Animation of images for each physical response 3. Color Image for each physical response 4. Sound Image for every physical response 5. Word for every physical response 6. Evaluation of procedures for ablation is associated with physical response 7. Evaluation of physical responses is associated with the procedure of ablation
3	Students know the water used for ablation	Students know the vocabulary related to water, origin, and media	Students have a concern in determining the water suitable for ablation	1. Sentence of the type of water 2. Word for water types 3. Sentence of the origin of water 4. Sentence of water media 5. Evaluation of proper water for ablation

5. Conclusion

Refer to several experiments conducted in the research, there are some conclusions, as follow:

- Cognitive aspects of English language content refer to the cognitive aspects of ablation lessons that have been determined before.
- Synchronization of cognitive aspects of ablation lesson content with English language content using Total Physical Response method can help multimedia learning design activities to produce multimedia learning components
- Combined cognitive aspects of ablation lesson content and English language content can be used as a reference for determining 2 in 1 affective aspect (the combination of both ablation lesson content and English language content)
- Affective aspects that have been found can be used to determine the multimedia learning parameters to be built.

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