



## DEVELOPMENT OF HOLISTIC-BASED SCIENCE LEARNING VIDEOS : AN EFFORT TO IMPROVE AFFECTIVE SKILLS OF MADRASAH IBTIDAIYAH STUDENTS

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### ABSTRACT

There is a tendency to ignore students' affective skills from the science learning process in the classroom. Therefore, the purpose of this research is to develop a holistic science-based learning video in order to improve the affective skills of students. The research method used is the research and development of the ADDIE model. A total of 14 students involved themselves as subjects in a limited test. The results showed that the holistic-based learning video developed by the researcher was suitable for improving the affective skills of the fifth-grade students of Madrasah Ibtidaiyah. The media and materials expert validation test results showed that the percentages were 81 percent and 89 percent, respectively, in the very feasible category. The responses of teachers and students also show the same thing, which shows that the video is very suitable to be used to improve students' affective skills. This research recommends that students' affective skills can be improved through holistic science-based learning videos.

### Introduction

Everyone has the right to good learning through a series of processes of educational activities (Sujatmoko, 2016; Indriyani, 2017; Nadziroh et al., 2018). This right is contained in the law concerning the National Education System (Undang-Undang Republik Indonesia Nomor 20, 2003). Through activities carried out in education, students develop all their potential (attitudes, skills and knowledge) so that they are skilled in dealing with the problems

that befall them in the future. Thus, education is an important activity because education can change human behavior, skills, and knowledge for the better (Kurniawan et al., 2018; Juhji & Nuangchalerm, 2020). However, in the learning process carried out in schools, there is a tendency to ignore the potential attitudes of students (Wahidah, 2020). Even though attitude is an essential aspect of the learning process at school (Parmiti et al., 2021).

Education is a framework process to influence students to adapt to their environment as well as possible (Dweck, 2013) so that it will cause changes in students that enable them to function in social life. There is a tendency for a good attitude affects learning outcomes (Riwahyudin, 2015). The results of Hoyi *et al.* (2019) recommend that teachers foster students' attitudes to improve their learning achievements. However, the existence of targets for achieving the curriculum is widely used because the learning process tends to ignore aspects of students' attitudes. However, according to Rijal and Bachtiar (2015), students with a good attitude become more studious so that their learning outcomes are satisfactory and vice versa.

In the 21st century, there are four competencies that students must possess, one of which is communication skills (Chidiac & Ajaka, 2018; Kembara et al., 2019; Khoiri et al., 2021; Supena et al., 2021). One aspect of communication competence is practical skills. Affective skills are essential competencies (Darmadji, 2011; Jannah, 2019; Betwan, 2019) and must be possessed by students after they have attended a series of learning processes in class. Therefore, in addition to knowledge and psychomotor skills, students who have attended a series of learning should have excellent and measurable affective skills. However, the facts on the ground – both in madrasas and in schools – these affective skills are neglected when assessing student learning outcomes. It is because learning prioritizes the transfer of knowledge.

The learning process prioritizes the transfer of knowledge through audiovisual animation (Novita & Novianty, 2020), prezzi and flash (Raihana et al., 2017), and video (He et al., 2012; Forbes et al., 2016; Pebriani, 2017; Sunami & Aslam, 2021) affects students' cognitive skills. Although able to improve students' cognitive learning outcomes, affective skills have yet to receive top priority. Therefore, it is necessary to develop media that can accommodate and improve students' affective abilities.

Some previous research has revealed the importance of students' affective skills (Imtihan, 2017; Jannah, 2019; Betwan, 2019; Wahyudi, 2020), even though several attempts have been made to increase students' affective skills. To improve practical skills, Agustini *et al.* (2015) applied learning using the VCT model, Nurhidayati and Sunarsih (2013) applied a motivational model in learning, and Puspasari *et al.* (2013) applied socio-drama. The results proved that

students' affective skills increased dramatically. However, none of them used holistic learning videos as a tool to improve these affective skills. Therefore, it is essential to investigate holistic learning videos' effects.

According to Wardani and Syofyan (2018), learning videos have proven effective in learning science. Several other studies have also reported the effectiveness of using learning videos in schools (Hadi, 2017; Hapsari & Hanif, 2019; Parlindungan et al., 2020; Fitriansyah, 2020). Other researchers also carry out the connection with the development of learning videos (Hanif, 2020). However, based on this, there has yet to research on developing holistic learning videos. Therefore, it is essential to research the development of this holistic based learning video.

According to Wisudawati and Sulistyowati (2022), natural science is a concept that requires strong reasoning and mental processes in a student. Juhji (2018) explains that science is a collection of knowledge systematically arranged from scientists' findings. Therefore, science must be taught holistically with various media assistance, such as using holistic-based videos. Holistic-based learning videos are learning videos that aim to teach students to understand teaching materials in a meaningful way that is related to the Islamic context. Thus, this research aims to increase elementary school students' affective skills by developing holistic-based learning videos.

## **Research methods**

This study uses research and development methods. The ADDIE model from Dick and Carey (1985) was chosen to determine the development steps, which include five stages: analyzing, designing, developing, implementing, and evaluating.

*Analysis.* Activities carried out at this stage include: analyzing needs to find out what problems are faced by teachers and schools, analyzing curriculum to adapt learning materials, and analyzing characteristics related to needs, namely determining learning media needed by students to improve affective aspects.

*Design.* Researchers design content according to the initial planning stages by considering other supporting sources, such as students' learning environment. In designing holistic learning video media, the activities were making science learning videos on blood circulation, validating the developed learning videos, and validating teacher and student response questionnaire instruments.

*Development.* This stage includes creating and testing holistic-based video media that will be developed, specifically on natural science material on human blood circulation. The framework in the previous stage (design) is realized into a product. Then, it is validated by media and material experts on quality, comments, and suggestions that must be improved.

*Application.* This stage is the result of development in learning at school. The activities include small group trials (pre-experimental) to analyze the effect on the feasibility and effectiveness of holistic video-based learning media to improve students' affective skills towards science material accompanied by verses of the Qur'an related to the human circulatory system. Science learning about the circulatory system material coupled with verses from the Koran aims to make students understand that blood is also discussed in the Koran so that they have a deep faith because science learning is taught holistically.

*Evaluation.* The product is evaluated by media experts, material experts, teachers, and student responses. The effectiveness of the media developed using the sample test experimental research method. The media that has been developed is then subjected to descriptive and qualitative analysis using the columns for comments, suggestions, and revisions according to user needs. Meanwhile, quantitative data based on response scores from student needs analysis, material experts, media experts, teacher, and student responses were processed using a measurement scale.

## **Results**

The results of this development research include analysis, design, development, implementation, and assessment. In detail, each scope of development research results is described as follows.

The analysis includes three steps: needs analysis, curriculum analysis, and student characteristics. Needs analysis is carried out to find out what problems schools face related to learning performance that has been going on so far. In the needs analysis, the researcher interviewed teachers in several schools and gave a questionnaire to the students. Interviews were semi-structured with teachers in several schools in the Gunung Kaler sub-district, especially at Kandawati III Public Elementary School. The results of the interviews showed two essential points: the lack of completeness of the media and the lack of achievement of the students' affective aspects. Then, a student questionnaire was conducted on 10 grade 5 students in elementary school and Madrasah Ibtidaiyah with the following results. The response result

is an overall average of 84%, classified as feasible criteria. So, the result is that learning video media can be developed in science lessons.

Next, conduct a curriculum analysis. The selection of science material is the first step in curriculum analysis. It is adjusted to the results of the need regarding problems previously obtained related to science lessons, media, and affective aspects. For this reason, researchers want to examine scientific subject matter connected with the planned verses of the Qur'an. Because this research connects natural science material with verses of the Qur'an, the researcher also adds basic competence in religious studies.

Furthermore, the characteristics of the fifth-grade students of Kandawati III Public Elementary School were analyzed. Based on observations, as well as considering the high-grade level of student development begins to enter the concrete operational stage. At this stage, the child already uses clear rules and has skills in logical thinking, but with the help of objects with concrete properties. Then, elementary school/madrasah ibtidaiyah children begin to control their emotions and understand the concept of right and wrong. Thus, educators have an excellent opportunity to provide innovation in learning for the integrity of students. From the conditions above, the researcher believes that developing science learning video media with a holistic approach to blood circulation material is necessary to improve students' affective aspects through their integrity towards science lessons with the Qur'an.

*Design*, some of these activities include: (1) making learning videos consisting of (a) material sources derived from the student manual "Theme 4: Healthy is Important Class 5" and other sources such as journal articles related to blood circulation material adapted to the contents in the elementary school student book; (b) Image sources include self-made images with the help of applications and images obtained from free image provider sites; and (c) development resources, including kinemaster, canvas, and background eraser; (2) Establish a map of the teaching media structure, adapted to the core competencies and essential competencies as well as indicators of achievement of affective aspects of competence and learning videos are designed with four essential parts, namely cover, introduction, material map, and cover; (3) Making research instrument questionnaires, including interview instruments, observations, questionnaires, and documentation; (4) Science learning video validation by material experts and media experts; and (5) Revision of science learning videos.

The development consists of two kinds of processes: the creation or development of media and the second validation by experts. The parts of the learning video media developed include:

1. Supporting image references, which were edited with several applications, including Canva and Background Erase,
2. Front cover, consisting of title, agency logo, name of researcher and supervisor, and name of an agency,
3. Introduction, consisting of an introduction to the author, reflection, elaboration of learning objectives and instructions in the next section,
4. Learning systematics, and closing.



Figure 1. Supporting images

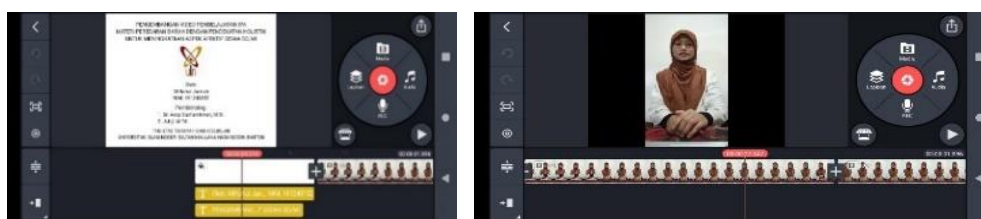


Figure 2. Front cover and introduction

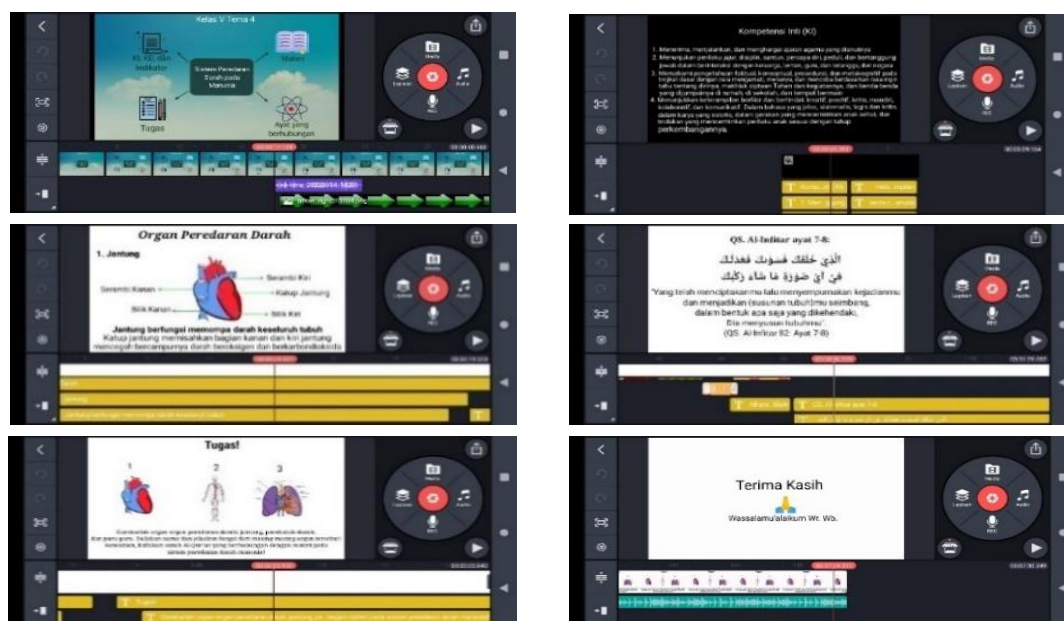


Figure 3. Systematic learning and closing

The systematics of learning describes the concept map of several parts of the video, including the material's substance. This section consists of 1) core competencies, flat competencies, and indicators; 2) material; 3) subsections related to the material; 4) tasks. The final part is closing, and there are thanks and closing greetings. After that, combine them as a whole. After the systematic part of learning is fulfilled, the videos are combined into one unit with the addition of music. The selected music is Amusement Park from the KineMaster application. The results of the material expert validation can be seen in Table 1 of this figure.

**Table 1. Material Expert Validation Results**

Aspect	Score	Score Criterion	Percentage	Criteria
Content Material	22	24	92%	Very worth it
Affective Impact	10	12	83%	Very worth it
Benefits	7	8	88%	Very worth it
Total	39	44	89%	Very worth it

Based on the table above, the validation results were obtained by material experts. The validation result is that the average percentage of all aspects is 89%, with very decent criteria. It means that the developed media can be used for the implementation stage for students. The results of media validation by media experts can be seen in Table 2 below.

**Table 2. Media Expert Validation Results**

Aspect	Score	Score Criterion	Percentage	Criteria
Message Quality	11	12	92%	Very worth it
performance	6	8	75%	Worthy
Language	16	20	80%	Worthy
Picture	15	20	75%	Worthy
Voice	10	12	83%	Very worth it
Total	58	72	81%	Very worth it

Based on Table 2 above, the results of validation by media experts were obtained. The validation result is that the average percentage of all aspects is 81%, with very decent criteria. It means that the developed media can be used for the implementation stage for students. Next, a revision of the science learning video on blood circulation was carried out. In the validation process, several inputs and suggestions for learning videos were developed by material experts and media experts. The results of the revision can be seen in Table 3 below.

**Table 3. Learning Video Revision**

No.	Before Revision	After Revision
1.	There needs to be an explanation regarding the blue veins.	
2.	The assignment section shows the part of the organ in question, then asks to state its name and function.	
3.	The narrator's voice at the beginning needs to be amplified on the listening device.	

*Application*, development of instructional media that has been validated by experts is then tested in the field in a pre-experimental manner, namely a limited trial of 14 fifth grade students at Kandawati III Public Elementary School and class teachers. Then, the respondents were instructed to fill out a questionnaire which was given as a closed assessment containing 15 questions. The teacher's response assessment was carried out by the class V teacher at Kandawati III Public Elementary School after implementation in class can be seen in Table 4 below.

**Table 4. Teacher Response**

Aspect	Score	Score Criterion	Percentage	Criteria
Display Quality	21	24	88%	Very worth it
Software engineering	10	12	83%	Very worth it
Theory	19	20	95%	Very worth it
Execution	6	8	75%	Worthy
Affective Impact	12	12	100%	Very worth it
Total	64	72	89%	Very worth it



Based on Table 4 above, the class teacher's response obtained the validation results. The result of the show the average percentage of all aspects is 89%, with very decent criteria. Then, the average affective impact percentage of 100% is classified as a very feasible criterion. The development of science learning video media has proven to be effective in improving the aspects of students in class V at Kandawati III Public Elementary School by the class teacher's assessment. The results of student responses are seen in Table 5 below.

**Table 5. Assessment of Student Responses**

Aspect	Score	Score Criterion	Percentage	Criteria
Affective Impact	265	280	95%	Very worth it
Material Mastery	98	112	88%	Very worth it
Appearance audios	192	224	86%	Very worth it
	102	112	91%	Very worth it
Total	746	840	89%	Very worth it

Based on Table 5 above, the validation results were obtained from student responses. The validation result show the average percentage of all aspects is 89%, with very decent criteria. Then, the percentage of the affective aspect after implementing the developed video media is 95% with very feasible criteria. It means that the media developed is effective for increasing the affective aspects of students by self-assessment, so it is concluded that they are effective for increasing the affective aspects of students.

At this stage, *assessment* (evaluation) is obtained by distributing questionnaires filled out by students, class teachers, material experts, and media experts. Media analysis based on the results of questionnaires filled in by students with an average percentage of 84%, material experts get an average percentage of 89%, and a media expert percentage of 81% is classified as very feasible. It means that the video media developed is suitable for use in science lessons. The response of class teachers and students fills in the effectiveness analysis. The results of class teacher response questionnaires averaged the percentage of all aspects of 89% with very decent criteria. Then, the average affective impact percentage of 100% is classified as a very feasible criterion.

Furthermore, the student response questionnaire results got an average percentage of all aspects of 89% with very decent criteria. Then, the percentage of the affective aspect after implementing the developed video media is 95% with very feasible criteria. It means that the media developed effectively increases students' affective aspects through self-assessment.

During the trial, the learning process was observed, and there was a change in the students' affective aspects. It can be seen from the results of the pre-test and post-test. When taking the

pre-test, the student's response to science learning was feeble. Students only knew science lessons separately and did not understand the connection between science material and religious material. It is different from applying a holistic media approach during the post-test, such as students' enthusiasm when they see the video media being broadcast. Their awareness of science and religion shows their acceptance of the material presented. Its integration can be demonstrated by gratitude. Saying al-Hamdallah with the balance of the body's organs is part of the integration.

### **Discussion**

The results of the video validation by material experts on the developed videos show feasibility in terms of content, affective impact, and benefits. In addition, the results of video validation by media experts on the developed videos show feasibility in terms of message quality, performance, language, images, and sound. Analysis of the development of video-based media based on teacher interviews shows two essential points: the need for more completeness of the media and the lack of achievement of the affective aspects of students. Then, the student questionnaire analysis results got an average percentage of 84 percent. Furthermore, the learning video media that has been developed is validated to determine its quality.

After the revision treatment, the results of the validation of the experts obtained an average percentage of material experts of 89%; the percentage of media experts was 81%, which was classified as very feasible. It means that the video media developed is suitable for use in science lessons, as previous research conducted by Wardani and Syofyan (2018) stated that videos developed for science learning on human blood circulation are effective for application in learning. The results of Pebriani's research (2017) also revealed a positive relationship between the use of science learning videos and learning outcomes. Meanwhile, Sunami and Aslam (2021) found that the use of video can increase students' interest in learning.

Based on the results of interviews with teachers, analysis of student questionnaires, and validation of material experts and media experts, the developed video media is suitable for use in learning science in grade 4. Efforts to improve students' aspects of abilities can be made with holistic-based learning videos. General science material is related to the problems of students' daily lives as a bridge to connect them with the verses of the Qur'an, which is a source of Islamic religious law. It is essential because many verses in the Qur'an reveal science (Purwaningrum, 2015; Safee et al., 2018; Lailiyah, 2018).

Observations were made during the learning process. After conducting the trial, there were changes in the pre-test and post-test results on students' affective aspects. The affective aspect becomes crucial because it relates to attitudes, character, behaviour, interests, emotions, and values within students. The importance of the affective aspect is expressed by Betwan (2019). The affective factors of students who have experienced this increase include:

1. Enthusiastic attitudes when video media was shown,
2. Student awareness of the relationship between general material and religion as evidenced by their acceptance of the material displayed, and
3. The integration of students' understanding can be seen from their gratitude by reciting alhamdulillah for the gift of sustenance, namely a balanced body organ.

The advantage of this finding lies in the video display section, which was developed by integrating the verses of the Qur'an in holistically discussing the material of human blood circulation. Based on the findings, this study revealed an increase in the affective aspects of students through the use of holistic science-based learning videos on human blood circulation material. Video development has been carried out by Ningrum *et al.* (2022), who found an increase in information-analyzing skills that had not been integrated with the verses of the Qur'an. According to Halimah (2018), integrating religious values can help understand the concept of knowledge, experience, and skills. Integrating verses of the Qur'an in learning has been shown to improve students' mastery of concepts (Yuliawati *et al.*, 2022). In addition, developing teaching materials through various platforms that integrate Islamic values is also very important for teachers, such as Larasati *et al.* (2020). They have developed an integrated e-module of Islamic values in the material on the respiratory system. Even though their research has integrated the verses Qur'an and Islamic values, what they have done is not on the material of human blood circulation, so this is a different finding from theirs.

## **Conclusion**

The development of science learning videos on holistic-based blood circulation materials can effectively improve the affective aspects of students. Therefore, this holistic science-based learning video can be used to improve students' affective skills. Even though there are still many weaknesses, this holistic-based learning video that has been developed can be an alternative to develop students' affective aspects.

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