



Proceeding SYMBION (Symposium on Biology Education)

<http://seminar.uad.ac.id/index.php/symbion>

2540-752X (print) | 2528-5726 (online)



Analysis the use of hataraku saibou animation film as biology learning media on blood circulation system material

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ARTICLE INFO

Article history

Submission Nov 11th, 2022

Revision May 11th, 2023

Accepted May 17th, 2023

Keyword

Hataraku Saibou

Biology Learning Media

Blood Circulation System

ABSTRACT

Some students complain that biology is a difficult subject, because it has quite complex material, there are some foreign terms, the material is drawn as abstract because the teacher's delivery is lectured and there is no direct observation of biological objects. It becomes an obstacle to the success of learning objectives. This study aims to determine the effectiveness of using the animated film Hataraku Saibou as a biology learning media on the material of the blood circulation system. This research method is an interpretative qualitative method by conducting field data collection techniques and student response questionnaire data on the use of Hataraku Saibou animated films as learning media. The results of data analysis show that students are helped in understanding the material of the blood circulation system through the Hataraku Saibou animated film and are enthusiastic and interested in making the Hataraku Saibou animated film as a biology learning media. The conclusion of this study is that the Hataraku Saibou animated film is effective as a learning medium in helping students understand blood circulation material. This research is expected that Hataraku Saibou animated film can be an alternative media for interesting biology learning.

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Introduction

According to Irnaningtyas ¹, Biology is the study of life, namely living things and their environment. Starting from cells, tissues, organs, organ systems, creatures, plants, animals and even microcosmic plants and animals. All of these concepts that students learn in learning biology such as cell material, organic and inorganic compounds, taxonomy of living things, material cycles, water transportation in plants, photosynthesis and respiration, protein synthesis, mitosis and meiosis, physiological processes, organs, reproductive system, respiratory system, digestive system, excretory system, circulatory system, hormonal regulation, nervous system, oxygen gas transportation, genetic engineering, and Mendel's law. Coverage that is wide

enough to be a topic of student learning, because it relates to everyday life - his day began. That is what makes students often complain and consider biology difficult to learn, because the material is abstract, difficult to understand the concept of material, a lot of material to learn, the material is not interesting, and the material is not considered important ². In addition, the teacher's teaching style seems monotonous because it uses the lecture / conventional method in delivering material, students' learning habits in understanding still use memorization, feelings and negative attitudes / dislike of students towards biological material because biological events are not logical because they cannot be seen with the naked eye, lack of learning resources ³, the use of learning media that does not attract student interest in learning to be another factor biology is a difficult and boring lesson. As in the material of the blood circulation system which has a lot of complex material coverage, and the depiction of concepts in blood circulation if delivered only by means of lectures causes students to find it difficult to digest the material presented. These problems will have an impact on student interest, motivation as well as learning outcomes, making it difficult to achieve learning objectives. Therefore, aspects that play a crucial role in supporting the achievement of learning objectives are needed, one of which is learning media.

Media comes from Latin which means introduction or intermediary. According to the Association of Education and Communication Technology or AECT defines media as all forms and channels used to convey information/messages ⁴. However, NEA defines media as any form of communication, whether printed or audio-visual, and its tools ⁵. Media can also be interpreted as something that is used as a distributor of messages from the sender to the recipient so that a learning process occurs that can stimulate students' thoughts, feelings, focus / attention, interests and attention ⁶. Thus the definition of media in learning is as a tool, teaching aids, and learning resources in teaching ⁵.

The types of learning media that can be used during the learning process are audio media, visual media and audio visual media ⁷. Audio media is media related to the senses of hearing and sound (can only be heard). This audio media is verbal (words / speech) and non-verbal (sound / sound and vocalization) in receiving messages. Meanwhile, visual media is media related to the sense of sight and images / photos / visuals (can only be seen). Visual media are verbal (linguistic messages in the form of writing) and non-verbal (visual / graphic elements) in receiving messages. Meanwhile, audio-visual media is media that involves the senses of hearing and vision at the same time (sound and visual/image) ⁸. The distribution of messages/information in this type of media is verbal and non-verbal.

In using learning media, it must also be adapted to the characteristics and styles of students in learning so that students can easily receive material and learning success can be achieved. According to Ramli ⁵, there are 7 student styles in learning, namely visual, auditive, kinesthetic, tactile, olfactory, gustative, and combinative. The first student learning style is visual. Students who learn with this style will rely on all their learning activities with whatever they see through their eyes or sense of sight. The second learning style is auditive, which means they rely more on their ears as a hearing tool in their learning activities to absorb and understand material quickly. The third student learning style is kinesthetic or students use movement/demonstration to be part of their way of learning. The fourth student learning style is tactile, which means that students with this style rely on their skin or hands as a sense of touch to absorb information/material. The fifth student learning style is olfactory or relying on the nose as a sense of smell in participating in learning. The sixth student learning style is gustative or relies on the sense of taste or tongue as their ability to learn. And the last student learning style is combinative or students combine all their functional sensory tools in their learning process, both the senses of sight, hearing, smell, taste, and touch. By adjusting the characteristics and learning styles of students with student learning media, it will help students better understand the learning or material presented. Therefore, learning media plays an important role in the learning process, so it is hoped that the use of creative, innovative learning

media can attract student interest in learning as well as overcome the problem of abstract biological material concepts.

Based on the problems at the beginning of the discussion that are often felt by students in learning biology, this research aims to help students overcome problems in learning by using audio-visual media. This research uses audio visual media because audio visual media is suitable for combinative student learning styles/types that do not rely on just one of the senses, but all senses. Audio visual media makes it easier for students to absorb and understand the material presented. In addition, some of the advantages obtained by using audio-visual-based learning media are that the images displayed are clear and can attract student focus, can be re-viewed, practical and fun, and viewing can be accelerated or slowed down according to wants and needs. Audio-visual media in learning also has functions including the first function of attention or to attract and direct the focus of learning students so that they can concentrate on the content or material being displayed. The second is the affective function, which functions in increasing students' interest and interest in learning because the use of visual images accompanied by supporting audio can arouse students' emotions and attitudes while watching. The third is the cognitive function, in addition to entertaining audio-visual media also functions to improve students' ability to understand and remember the material presented through audio-visual media. And the last is a compensatory function, namely audio-visual media can help students who have weaknesses in reading and organizing material, as well as those who have weaknesses in recalling material ⁹.

Researchers used the animated film *Hataraku Saibou* as a medium for learning biology of the blood circulation system material. The selection of the animated film *Hataraku Saibou* as a learning medium is a production film from Japan because animated films have diverse and unique visual characteristics. In addition, the animated film written in a manga series and made into a movie by Akane Shimizu has a biology theme that tells about the life of cells in the human body. In all seasons of the *Hataraku Saibou* animated film, there are 12 episodes, all of which discuss the work of red blood cells, white blood cells, platelets, blood circulation, and even the body's mechanism in dealing with viruses, bacteria or a certain disease ¹⁰. This will greatly help students who have problems learning biology because the *Hataraku Saibou* animated film makes abstract biology topics clearer and more focused so that students can see biological processes directly with visual assistance by anime characters, so that student interest and learning outcomes also increase.

Method

This research is qualitative research, namely describing the object of study under study in the form of a description of words based on data from research samples then analyzed and conclusions drawn. This research is interpretative because it uses field data, so that in this study the researcher places himself as an observer to understand, interpret the object of study, and use the results of the researcher's observations and observations of others then analyze and report the results of his study accurately, clearly, and objectively. The implementation of this research was in May 2022 at MA PPKP Darul Ma'la Winong. The subjects in this study were students of class XI MIPA 2 MA PPKP Darul Ma'la Winong as many as 32 people.

This research was conducted at MA PPKP Darul Ma'la Winong by taking research samples by random sampling in the population of XI MIPA 1 and 2 classes with XI MIPA 2 class as the research sample. This research method is grounded theory with data coming from the field, namely the use of *Hataraku Saibou* animated films as learning media.

The research procedure begins with the beginning of learning using the lecture method by the teacher on blood circulation material using learning media in the form of books for 20 minutes, then continued with the viewing of an animated film entitled *Hataraku Saibou* for 20 minutes which contains biology education, especially blood circulation in episode 8. After

completing the learning session, then given a questionnaire link that contains an instrument of questions about animated film-based learning activities that took place before.

The data collection technique is by observation / field result data on the learning activity process. Then, secondary data collection in the form of a questionnaire regarding student opinions during learning activities takes place. The data analysis technique uses qualitative descriptive statistical analysis to describe the sustainability of animated film-based learning as a learning medium.

Results and Discussion

1. Attention Function

The attentional function of audio visual media is to attract and direct students to concentrate on the content of the lesson displayed through audio visual media. In this section, the attentional function of social media for students will be seen through the use of Hataraku Saibou animated films as audio-visual learning media in class XI MIPA 2 MA PPKP Darul Ma'la Pati. The episode of Hataraku Saibou animation used in learning is episode 8 which has a duration of 23 more 40 seconds which is aired once face-to-face, telling the story of the journey of red blood cells that are carrying out their own circulation tasks to send oxygen throughout the body. The essence of this episode is about the large and small circulatory system by red blood cells. During the use of Hataraku Saibou animated films as learning media, it will be seen how the reaction and response of students, as well as whether or not there is an effect of using Hataraku Saibou animated films in learning biology material on their blood circulation system. At the end of the animation film viewing session, a questionnaire was given to students regarding the use of Hataraku Saibou animation film in learning biology that they have participated in. The use of Hataraku Saibou animated films in one face-to-face session was carried out after learning the material of the blood circulation system which was carried out in the previous hour, namely with the conventional learning method of the teacher explaining the material to students lasting for one hour of learning. After that, during the second hour of learning, the use of Hataraku Saibou animated films as learning media began to be used.

The situation when the teacher explains the learning material conventionally, there are still some students who do not pay attention to the learning process and divert their concentration and focus with other things, such as talking with their seatmates, playing gadgets silently, teasing friends and others. After finishing the conventional learning and the Hataraku Saibou animated film began to be shown, students looked very enthusiastic, excited and their focus was fully on the animated film being played. Their attention and concentration when watching the Hataraku Saibou animated film did not seem to be distracted as before when the teacher was explaining the subject matter, and in certain scenes in the animated film they seemed enthusiastic to continue watching it.

This was obtained after examining the situation / atmosphere of the class and students who were seen directly during the showing of the animated film Hataraku Saibou. Furthermore, there is data from the questionnaire given to students to strengthen the above explanation regarding the use of Hataraku Saibou animated films as a biology learning media for blood circulation system material. Here are some questions and data processing results that can help in explaining the attentional function. Questionnaire questions that can be used in this attentional function are the first question that asks how students about the use of Hataraku Saibou animated films in learning biology of the blood circulation system material. The results of this question can be seen in table 1 below:

Table 1. Student Response to the Use of Hataraku Saibou Animated Film in Learning Biology of Blood Circulation System Material

Alternative Answer	Frequency	Percentage (%)
Very Interesting	19	59%
Quite Interesting	13	41%
Less Interesting	0	0%
Not Interesting	0	0%
Total	32	100%

Based on the results of the table, it can be seen that more than half think that the animated film Hataraku Saibou is very interesting as a learning media. Furthermore, in this attention function, a question on the questionnaire can be used which asks what advantages students feel when the Hataraku Saibou animated film is used as a learning media. The following can be seen the results of data processing from these questions in table 2:

Table 2. Students' Response to the Advantages of Hataraku Saibou Animation Film as Learning Media

Alternative Answer	Frequency	Percentage (%)
Better understanding of the blood circulation System	15	47%
Interesting so you don't get bored quickly	10	31%
Entertaining so that it becomes a passion for learning	7	21%
Total	32	100%

Based on the results that can be seen in the table, almost half (47%) think that the advantages of the Hataraku Saibou animated film make them understand more about the lesson material of the blood circulation system, while almost half (31% and 21%) think that the Hataraku Saibou animated film attracts and entertains them so that it makes them not feel bored and excited in learning biology material of the blood circulation system.

Based on the explanation and data above, it can be seen that the Hataraku Saibou animated film can attract the focus of students' attention and not be distracted by anything other than learning. with the attention and focus on the Hataraku Saibou animated film used as learning media, students will be more fully concentrated on learning in class.

2. Affective Function

The affective function of audio visual media is to increase the interest and pleasure of students when learning by using visual images and audio, so it can be said that the affective function of audio visual media can be seen from the enjoyment of students when the audio visual media is used. This affective function can also arouse students' emotions and attitudes. As has been seen in the discussion of the attentional function, that by using the animated film Hataraku Saibou as an audio visual learning media, students give greater attention and focus when watching it, and in this affective function will be seen the enjoyment of students when watching the animated film Hataraku Saibou.

To explain the affective function, it can be seen from the nature and behavior of students at the time of the research. As explained earlier that there are some scenes that are interesting to them, it can be seen that they enjoy watching the animated movie Hataraku Saibou and want to continue watching and enjoying it. When the Hataraku Saibou animated movie was first used

as learning media in the classroom, students' interest in watching anime was already visible, they were also seen laughing during certain scenes. The interest and enthusiasm of learners to watch the animated movie Hataraku Saibou affects the learning atmosphere in the classroom.

Data to explain the affective function is also found in the questionnaire data given to students in the form of questions about what students usually do outside of class hours to improve their understanding of biological material. This question is an answer with a description so that students answer it with their own answers, and in processing the data, first equalized the aligned answers. The following can be seen in table 3 the results of the answers to these questions that have been processed :

Table 3. Students' Response to the Advantages of Hataraku Saibou Animation Film as Learning Media

Alternative Jawaban	Frequency	Percentage (%)
Re-studying lessons at home	7	28%
Watching online learning videos on social media	14	43%
Taking tutoring	11	34%
Total	32	100%

As seen in the table, almost half with a percentage of 43% answered watching online learning videos on social media, and a small portion with 28% repeating lessons at home and 34% attending tutoring. Based on these answers and percentages, it can be seen that things related to audiovisuals are interesting for them. In this affective function, it can be seen that with concentration on the ongoing lesson, students' interest in the lesson also increases. Based on the explanation and data above, it can be seen that the Hataraku Saibou animated film increases students' interest in learning in class and the interesting thing about the Hataraku Saibou animated film is that it is an example of audio-visual media that uses audio and images at the same time.

3. Cognitive Function

The cognitive function of visual media is to increase understanding and develop learners' ability to remember information or messages seen. In this study, when the animated film Hataraku Saibou was used as learning media, the learners were asked to review what they had captured during the screening of the movie. After the Hataraku Saibou animated film that was played was finished, together and one was appointed to review the large blood circulation and small blood circulation carried out by red blood cells.

Based on the results of research on the atmosphere of the class when the Hataraku Saibou animated film finished airing and the teacher tried to review / draw conclusions together, it was seen that many students responded to retell the outline of the plot of the Hataraku Saibou animated film in episode 8 about small and large blood circulation, although it was seen that some students were silent to think for a moment. This is an advantage in using the Hataraku Saibou animated film as a biology learning media because students can know the material of the blood circulation system clearly with the concepts in the Hataraku Saibou animated film.

Based on the questionnaire given to students regarding the question of whether the animated film Hataraku Saibou helped improve their understanding of the blood circulation system material, their answers can be seen in table 4 below :

Table 4. Students' Response to Hataraku Saibou Animated Film in Helping to Improve Understanding of Blood Circulation System Material

Alternative Answer	Frequency	Percentage (%)
Very Well Understand	15	47%
Quite Understand	16	50%
Less Understand	1	3%
Do not Understand	0	0%
Total	32	100%

Based on the table above, it can be seen that most of them with a percentage of 50% think that the Hataraku Saibou animated film is quite helpful in improving understanding of the blood circulation system material. While the questionnaire question regarding whether students feel helped in using Hataraku Saibou animated films as learning media is described in table 5 as follows:

Table 5. Students' Aided Response to Hataraku Saibou Animated Movie as Biology Learning Media

Alternative Answer	Frequency	Percentage (%)
Understand the concept of the material	14	44%
No misconceptions about the material	10	31%
Clear and memorized with the material	8	25%
Total	32	100%

From the table above, it can be seen that 44% of students think that the Hataraku Saibou animated film helps them in understanding the material of the blood circulation system in terms of understanding concepts, 31% of them think that through the Hataraku Saibou animated film it does not make them confused / misconceptions about the material of the blood circulation system, and a small portion of 25% with the Hataraku Saibou animated film used as a learning media for learning media for blood circulation system material they can understand clearly and memorize outside the head about small and large blood circulation.

From the above data that has been presented, it can be concluded that the use of Hataraku Saibou animated films as a learning medium helps students to understand concepts and reduce misconceptions that exist in the material of the blood circulation system and increase their ability to remember material.

4. Compensatory Function

The compensatory function of audio-visual media is to help learners who are weak in reading to organize information and recall it. In this case, everyone has a different way of learning. There are people who prefer to memorize words contained in textbooks, there are also people who learn more easily by listening to other people's explanations, and there are also those who learn more easily by using props. Using props or media, is one way that can be used to help students who are less able to learn by memorizing or listening to explanations from others.

From tables 1 - 5, it can be seen that students can understand the material of the blood circulation system well through the concept of circulatory material offered in the animated film Hataraku Saibou as a biology learning media with one face-to-face meeting. To find out

whether students really understand the lesson and still remember it, the teacher asks students to review the contents of the animated film Hataraku Saibou in episode 8. As a result, most students were able to remember and repeat the concept of large and small blood circulation material in the animated film smoothly. Based on this explanation, it can be said that the use of Hataraku Saibou animated films as a biology learning media on the material of the blood circulation system helps students to remember, understand concepts, and explain back the learning that has been learned before.

Kesimpulan

The use of Hataraku Saibou animation film is effective to help students in learning and understanding the material of blood circulation system. This can be said because most students think that the use of animated films as learning media in class can help them to learn biology material. In the attention function, learning media can be said that the Hataraku Saibou animated film can make students focus and pay attention during learning. This is because the Hataraku Saibou animated film as audio-visual media has audio or verbal elements and image or non-verbal elements that are considered interesting by students, so that the attention of students who are initially easily distracted / not focused during learning becomes more focused and concentrated when the Hataraku Saibou animated film is used as a biology learning media. After the attentional function, there is also an affective function of animated films that can increase students' interest and pleasure in learning, and also involve students' emotions and attitudes. The use of Hataraku Saibou animated film as a biology learning media can increase the interest of students as seen from the enthusiasm of students when they know that learning will use animated films. The classroom atmosphere when the educator explains the subject matter and when the animated film is used as a learning medium also looks different. When the educator is teaching with the usual method / lecture method the atmosphere of the class looks tense and silent, but when the animated film is used for learning the atmosphere of the class looks more comfortable for learning, this is what is said that the use of Hataraku Saibou animated films can involve the emotions and attitudes of students. After that there is a cognitive function of Hataraku Saibou animated films can help students to understand biology learning material on the blood circulation system. Furthermore, the compensatory function helps students to understand and memorize concepts/materials as well as recall them. Based on this explanation, it can be said that the use of Hataraku Saibou animated films is effective in helping students to learn, understand and recall the biology material of the blood circulation system.

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