



# Improving Junior High School Students' Response and Science Learning Outcomes in Special Sports Class Through Animated Learning Media

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Received: April 12, 2024

Revised: May 29, 2024

Accepted: July 25, 2024

Published: July 31, 2024

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DOI: [10.29303/jppipa.v10i7.7378](https://doi.org/10.29303/jppipa.v10i7.7378)

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**Abstract:** This research aims to improve student responsiveness and science learning outcomes in special sports classes by using animated learning media. Through this research, it is hoped that student responses during teaching and learning activities will increase and science learning activities will become enjoyable so that ultimately, they can improve science learning outcomes. This research is a three-cycle Classroom Action Research. Each cycle consists of four stages. The research subjects were 36 class VIII students (special sports class) at one of the state junior high schools in Samarinda. The research instruments used were student responsiveness observation sheets during teaching and learning activities, learning activity observation sheets, and learning outcomes instruments (post-test questions). The resulting data is then analyzed for the average value. In the first cycle learning outcomes reached 42% and student responsiveness to teacher activities in teaching and learning was only 56% (less). In cycle 2 learning outcomes reached 72% and student responsiveness to teacher activities in teaching and learning increased to 68%. In cycle 3 the science learning results for the special sports class finally reached classical completeness of 88% and responsiveness to teacher activities in teaching and learning reached 93% (exceeding the classical completeness standard). The results of this research show that animated learning media can improve responsiveness and science learning outcomes in special sports classes.

**Keywords:** Animated learning media; Science learning outcomes; Special sports classes; Student responsiveness

## Introduction

Every student has different talents and there are students who have talents or abilities that are above average. Law no. 20 Article 32 of 2003 concerning the national education system states that special education is educational level intended for students who have the potential for intelligence and special talents. Minister of National Education Regulation no. 34 of 2006 further explains that one of the goals of special education is to obtain students who succeed in achieving peak achievements in the fields of science and technology,

aesthetics, and/or sports, at the educational unit level-an, district/city, provincial, national and international. Special education in the field of sports, namely through Special Sports Schools (SKO) and Special Sports Classes (KKO), is often found in Indonesia and there is one national level SKO (SKO Ragunan) and four SKOs which are Student Sports Education and Training Centers (PPLP). Special Sports Classes (KKO) are spread throughout almost all of Indonesia, for example in Samarinda Regency which has three schools that have special sports classes. One of the schools that has special sports classes is one of the junior high schools in

## How to Cite:

Elbadiansyah, Masyni, & Maulana, A. (2024). Improving Junior High School Students' Response and Science Learning Outcomes in Special Sports Class Through Animated Learning Media. *Jurnal Penelitian Pendidikan IPA*, 10(7), 4294–4300. <https://doi.org/10.29303/jppipa.v10i7.7378>

Samarinda. In this class there are 36 students (14 female students and 22 male students). Each student in this special sports class has talents in different sports fields so that every day they are trained in their respective sports talents. The students in this sports class have high enthusiasm for practicing their sports talent, so sometimes they practice more than the required practice hours. Unfortunately, this high enthusiasm is not accompanied by enthusiasm for learning in class. For some subjects, for example social studies and Indonesian, their enthusiasm for completing assignments is very low. Of the 36 students, only three students submitted social studies assignments and no more than five students submitted composition assignments. The science test scores of sports class students are also relatively bad. In Semester I only five students participated has a value above the KKM. The poor learning achievement of sports class students is also found in other schools.

Fatigue is one of the reasons that makes sports class students less enthusiastic about studying and doing assignments. Sports activities for sports class students are very high because training for sports class students is carried out until the afternoon. Sports activities are so high that these students come home tired so they don't have time to study or do their assignments. A personal approach has been taken to the students, for example by giving advice so that they can spend time between training and while waiting for the trainer to come by studying or doing assignments, but unfortunately, they have not implemented this suggestion.

The lack of enthusiasm of sports class students in learning activities needs to be resolved considering that not all non-academic achievements can lead a student to a higher level of education. The achievement route, for example, can only be used by those who have at least 1st to 3rd place achievements at the District Level. This shows that only students who have achievements to a certain level can depend their future on their sporting talent. This reality shows that non-academic achievements must also be accompanied by academic abilities. Therefore, students' enthusiasm and enthusiasm for learning and their understanding of what is taught in class must be increased.

Research conducted by Gruzd et al., (2018) shows that the learning environment is one of the factors that influences the academic achievement of student athletes (school athletes). Therefore, the learning environment for school athletes (in this case sports class students) is an element that needs to be structured in such a way that the learning environment can encourage student academic achievement.

The learning environment is closely related to student involvement (students' engagement). A supportive learning environment, for example in the form of

support and challenges from teachers which will later influence student engagement (Barber et al., 2015; El-Deeb et al., 2020; Struyf et al., 2019). Student engagement is defined as the level of attention, curiosity, interest, optimism and enthusiasm that students show when they are learning (Andriani et al., 2018; Back et al., 2015; Carrillo & Flores, 2020; Chen & Wang, 2018; Hasanah et al., 2019; Hidayati et al., 2021; Nwagwu, 2020; Sjöström et al., 2017), or which can be interpreted as a student response. Response is an activity or change in a creature's behavioral patterns as a result of stimulation or fluctuations in environmental conditions (Alias et al., 2013; Puttinaovarat & Horkaew, 2020). Responsiveness comes from the basic word response which means response, reaction or answer. Therefore, student responsiveness referred to in this research is students' responses to activities carried out by teachers during teaching and learning activities. It is hoped that increasing student responsiveness can then increase student involvement so that ultimately it can improve student learning outcomes.

Learning outcomes are patterns of actions, values, understanding, and attitudes as well as apperception and ability (Casagrand & Semsar, 2017; Glaab & Heyne, 2019; Graziano et al., 2016; Hariadi et al., 2021; Kurniasih et al., 2021; Lile & Bran, 2014; Mutrofin et al., 2017; Nordin & Alias, 2013; Norman, 2018; Sahronih et al., 2019; Tajudin et al., 2018; Turrini et al., 2018). Several experts further stated that one learning media that can improve the quality of learning is animated learning media (Wahyuni et al., 2019). Yusuf et al., (2017) state that the advantages of animation are Animation is able to convey a complex concept visually and dynamically, Digital animation is able to attract students' attention easily, Animation is able to convey a message better than using other media, Animation is able to offer a learning medium that is more fun, attracts attention, increases motivation and stimulates students' thinking, and The visual and dynamic presentation provided by animation technology is able to facilitate the process of applying concepts or demonstrations. It is hoped that the advantages of animation in creating a more interesting learning atmosphere can trigger sports class students' responses to teaching and learning activities, so that increasing student responses is ultimately expected to improve their learning outcomes. With the considerations above, this research was carried out to find out Can animated learning media improve the responsiveness and learning outcomes of science students in special sports classes.

## Method

The method used in this research is the class action research method. In this research, actions were carried out consisting of three cycles, each cycle using four stages, namely Planning Stage which consists of selecting the competencies that will be used, creating a Learning Implementation Plan (RPP), compiling animated learning media, and create assessment instruments, Implementation Stage which consists of carrying out action treatment in the form of science learning using animated learning media, observation Stage which consists of observing student responses to teacher activities during teaching and learning activities, and carrying out posttests to find out the results student learning, and reflection Stage, namely carrying out analysis of research results and the results are used to improve actions that must be taken in the next cycle or draw research conclusions. The research subject was class VIII-1 (special sports class) in one of the junior high schools in Bogor Regency. The research took place from January to March 2014 on the subject matter Energy and Business. The research instruments used include observation sheets on student responsiveness during teaching and learning activities, observation sheets on learning activities and learning outcome instruments (posttest questions). The observation sheet on students' responsiveness during teaching and learning activities and the observation sheet on learning activities were filled in by two observers. The learning outcomes instrument is a posttest question given at the end of the learning cycle.

## Results and Discussion

Student responsiveness and science learning outcomes are presented in Table 1. The data shows that there is an increase in student responsiveness in teaching and learning when using animated learning media.

Increasing student responses in learning science have an impact on increasing learning outcomes. Based on the results of the posttest carried out at the end of each cycle, science learning outcomes in this special sports class increased after using animated learning media, from 42% completeness in cycle 1 increased to 72% in cycle 2 and in cycle 3 it was able to surpass classical completeness (88%). The average learning outcome, which in cycle 1 only reached 66 (below KKM), experienced an increase, which in cycle 2 increased to 88 (above KKM) and cycle 3 to 90 (exceeded KKM). The results of this research support the research results and statements of several experts.

**Table 1.** Changes after learning science using animation media

| Aspects Observed                                | Cycle 1 (%) | Cycle 2 (%) | Cycle 3 (%) |
|---|-------------|-------------|-------------|
| Percentage of complete results of study science | 42          | 72          | 88          |
| Average posttest results                        | 66          | 81          | 90          |
| Student responses to activities                 | 56          | 68          | 93          |

Rahim et al. (2020) stated that animation has its own role in the field of education, especially to improve the quality of teaching and learning. A similar statement was also put forward by Zaharah & Susilowati (2020) that animation media in learning aims to maximize visual effects and provide continuous interaction so that understanding of teaching materials increases. Animation media in learning has the ability to explain something complicated or complex to be explained with just pictures and words. With this capability, animation media can be used to explain material in a real way cannot be seen by the eye, by means of visualization the material being explained can be depicted. Research by (Yusuf et al., 2017) also showed that animation media had a significant influence on students' understanding of the concept of molecular genetics. Animation media in learning that is used both in explaining concepts and examples, apart from being static auto-run animations or activated via buttons, can also be interactive animations that facilitate users (students) to play an active role by changing the value or position of certain parts of the animation. the. Research conducted by Cakiroglu & Yilmaz (2017) further explains that the factor that makes animation can influence student learning is because animation makes students allocate greater visual focus than when given text alone.

The application of animation-based learning, apart from being able to improve learning outcomes and student learning responsiveness, also has implications for the need to use technology in various fields, including education. The phenomenon of globalization, which is characterized by the synergy of information and communication technology (ICT), should be used as a fundamental factor to transform educational institutions to support the creation of a new generation of learning environments. In education, this can be done by utilizing the latest ICT to improve the quality of learning (Al-araibi et al., 2019; Andrejevic & Selwyn, 2020; Elleithy & Sobh, 2015; Hsu et al., 2017; Ichsan et al., 2019; Mao, 2014; Nwagwu, 2020; Rasmussen, 2016; Verzosa et al., 2021; Yan et al., 2023). Apart from using ICT, teachers also need to pay attention to the way animation is presented, in accordance with the research results which show that increased student learning outcomes occur when narrative is combined with pictures (Rahim et al., 2020; Soutter & Möttus, 2021;

Yusuf et al., 2017). Cueing important parts can also improve learning using animation, in line with the research results which shows that providing cueing can further increase the benefits of learning with animation (Pane et al., 2021; Siregar et al., 2021; Zaharah & Susilowati, 2020; Zulmaidah et al., 2020).

Learning media in the form of animation is very appropriate for the development of the 21st century, namely in accordance with the 4C capabilities (critical thinking, creative thinking, collaboration, communication). Learning media can be developed according to the needs of media in the classroom (Trilestari & Almunawaroh, 2021). The development of animated media should also prioritize higher order thinking skills (HOTS). These abilities need to be developed because they are very relevant to learning outcomes that need to be improved.

The impact of media development is increased learning motivation in students (Priyambodo et al., 2012; Zaharah & Susilowati, 2020). Media that is in accordance with the development of the times and relevant to the learning context is needed to support good learning outcomes. Learning media given to students must of course be in accordance with the topic of discussion and the context of the problem being discussed, for example related to health problems related to sports.

The use of learning media in the form of animation can be very relevant to various health problems currently being experienced by students. Various disease problems are experienced by students in urban areas so that scientific literacy also contributes to forming learning awareness in students. The impact that can be given from the learning media is increased learning motivation in students so that the 21st century skills needed can also increase.

## Conclusion

Use of animated learning media can increase student responsiveness and science learning outcomes in special sports classes. A good learning plan supported by good learning media will not be successful if the teacher as facilitator does not master ICT. Therefore, the use of animated learning media will be successful if animated learning synergizes the lesson plan, learning media, and the teacher's ICT capabilities.

## Acknowledgments

Thank you for all support from IKIP PGRI Kalimantan in this research.

## Author Contributions

E, writing articles, M., develop instrument, A.M., design research and analyze data.

## Funding

This research received no external funding.

## Conflicts of Interest

All authors declare that there is no conflict of interest.

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