



## The Role of Instructional Media in Increasing Students' Interest and Motivation in Learning Physics

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**Abstract:** This study aims to analyze the role of instructional media in enhancing students' motivation and interest in learning physics. The research method employed is a literature review. Data were collected by analyzing 20 articles related to the role of instructional media in increasing students' interest and motivation to learn physics, followed by synthesizing and drawing conclusions from these sources. The findings indicate that the use of video-based and web-based learning media is significantly effective in improving students' conceptual understanding and learning outcomes. These media make learning more engaging and interactive, thereby addressing the common perception that physics is a difficult and monotonous subject. Moreover, the integration of innovative technologies such as virtual laboratories and online platforms also demonstrates improvements in students' learning interest and motivation. These findings highlight the importance of teachers' creativity in designing learning experiences that utilize diverse media to foster engaging and effective learning. In conclusion, instructional media play a crucial role in enhancing students' motivation and interest in learning, thereby supporting better learning outcomes in physics.

**Keywords:** Learning Media, Physics Material, Student Interest, Student Motivation.

### Introduction

Education is one of the key pillars in shaping a knowledgeable and highly competitive generation. Among the various subjects taught in schools, physics is often perceived as a challenging subject for many students. The fact that physics comprises both concrete and abstract concepts makes it difficult for students to fully comprehend. Moreover, physics as a discipline requires students to engage actively, think creatively, and discover new ways of learning (Syifa & Mastul, 2023). The low levels of interest and motivation among students in learning physics have become one of the main challenges faced by educators. One of the contributing factors to this issue is the use of teaching methods that are less engaging and lack contextual relevance.

Instructional media serve as tools utilized by educators to deliver information and facilitate students' understanding of learning materials (Shawmi et al., 2023). These media play a crucial role in the teaching and learning process. The use of appropriate and innovative instructional media can help enhance students' interest and motivation. Moreover, instructional media aid in the effective

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transmission of messages from teachers to students. Engaging instructional media can make complex physics concepts easier to understand and more relevant to students' everyday lives. In addition, interactive learning media can encourage students to participate more actively in the learning process, thereby increasing their motivation. The selection of instructional media requires the application of specific models, principles, and criteria to ensure the choice of effective, accessible, and meaningful learning tools (Mansur & Utama, 2021; Irvani et al., 2023).

This study aims to examine the role of instructional media in enhancing students' interest and motivation in learning physics. By identifying the role of effective instructional media, it is expected that educators will gain a better understanding of how these media contribute to fostering deeper student comprehension of physics concepts and improving their learning outcomes.

This study is significant as its findings can provide valuable insights for teachers and curriculum developers in designing more effective and engaging teaching methods, particularly in physics education. Consequently, it is expected to foster a more enjoyable and meaningful learning environment for students, ultimately contributing to the improvement of the quality of physics education in Indonesia.

## Method

The research method used in this research is literature study. The literature study method is a research approach used to collect, analyze, and interpret information derived from literature or other written sources (Shawmi et al., 2023). The secondary data used in this study consist of credible national and international journals, as well as other reliable web-based sources (Suliyannah et al., 2020). The data collection technique involved reviewing a selection of articles that discuss the use of instructional media in enhancing students' interest and learning outcomes in physics. The collected data were then analyzed to obtain insights regarding the role of instructional media in improving students' motivation and achievement in learning physics. The analyzed data covered publications from the period of 2018 to 2024.

The research process comprised several stages: (1) defining the problem topic; (2) identifying and collecting articles aligned with the topic; (3) reading and analyzing the selected articles; and (4) conducting further analysis of the relevant studies (Saumarachmati & Irawati, 2024).

Data analysis in this literature study involved the following steps: (1) collecting data from the articles; (2) data reduction, that is, summarizing, selecting essential points, and focusing on the most salient aspects of the analyzed articles; (3) data presentation in the form of concise descriptions, diagrams, intertopic relationships, and so forth; and (4) drawing conclusions.

## Result and Discussion

The results of the literature review analysis on the role of instructional media in enhancing students' interest and motivation in learning physics are presented in Table 1 below.

**Table 1.** Results of Literature Analysis

| No | Author(s)                                       | Title   | Year | Media | Material | Findings  |
|----|---|---|------|-------|----------|---|
| 1  | Sandi Aswara, Fleony Dea Amanda, Riska Fitriani | The Effect of Video-Based Physics Learning Media on Increasing Students' Interest and Understanding of Pressure Concepts at SMAN 2 Sungai Penuh | 2022 | Video | Pressure | The results show that (1) students' interest in physics taught through video-based learning is high, and (2) conceptual understanding is at a moderate level. |
| 2  | Monica Gabriela Nainggolan, Ratih               | Enhancing Students' Learning Motivation Through Learning Media  | 2024 | —     | —        | The use of various strategies and learning media appropriate to the learning objectives can   |

| No | Author(s)   | Title   | Year | Media                 | Material             | Findings  |
|----|---|---|------|-----------------------|----------------------|---|
|    | Ayunda,<br>Wahyuni<br>Amanda<br>Hasibuan,<br>Windy<br>Antika                                |   |      |                       |                      | significantly increase students' motivation.  |
| 3  | Hamsi<br>Mansur,<br>Agus Hadi<br>Utama  | The Evaluation of<br>Appropriate Selection<br>of Learning Media at<br>Junior High Schools   | 2021 | —                     | —                    | The study shows that junior high school teachers in Banjarmasin are able to plan, select, and use learning media effectively.                     |
| 4  | Shintya<br>Azzahra,<br>Nuri Istifah<br>Khasanah,<br>Dwi Agus<br>Kurniawan,<br>Maison et al. | Analysis of Students'<br>Learning Interest in<br>Physics Learning<br>Using Websites at<br>SMAN 8 Tanjung<br>Jabung Barat            | 2022 | Website               | —                    | 76% of students were interested in using websites as physics learning media, showing high data validity and reliability.                          |
| 5  | Putriani<br>Saumarachmati,<br>Flarencia<br>Irene Mulya<br>Irawati                           | The Use of Learning<br>Media and Science<br>Learning Outcomes   | 2024 | —                     | Science              | The use of learning media in science learning has a high effect size (0.87), categorized as a large effect on students' learning outcomes.        |
| 6  | Syaemar<br>Liza   | Improving Students'<br>Interest and<br>Achievement in<br>Physics Through 3D<br>Animation Learning<br>Media at SMAN 3<br>Muaro Jambi | 2021 | 3D<br>Animation       | —                    | Results show that students' learning interest reached 81% (very high), and learning mastery reached 89% after using 3D animation media.           |
| 7  | Hamid<br>Syahropi,<br>Rindi<br>Genesa<br>Hatika,<br>Indah<br>Lestari                        | The Effect of<br>Doratoon Learning<br>Media on Students'<br>Motivation in Physics<br>Learning                                       | 2024 | Doratoon              | Global<br>Warming    | The use of Doratoon media increased students' learning motivation from 48% (low) to 80% (high), indicating a 32% improvement.                     |
| 8  | Beri Agung<br>Wahyudi,<br>Jumadi,<br>Eryanti  | Physics Learning<br>Media Using<br>Recycled Materials to<br>Improve Creativity<br>and Learning<br>Motivation                        | 2024 | Recycled<br>Materials | —                    | The use of recycled materials as learning media effectively increases students' creativity, motivation, and critical thinking skills.             |
| 9  | Sundus<br>Maulidina,<br>Yoga Budi<br>Bhakti   | The Effect of Online<br>Learning Media on<br>Students'<br>Understanding and<br>Interest in Learning<br>Physics Concepts             | 2020 | Online<br>Media       | —                    | 52.75% of students disliked online learning; it affected understanding and interest but was considered less effective than face-to-face learning. |
| 10 | Dasmo, Ade<br>Puji Lestari,<br>Mashudi<br>Alamsyah  | Improving Physics<br>Learning Outcomes<br>Through Interactive<br>Media Based on<br>iSpring Suite 9                                  | 2020 | iSpring<br>Suite 9    | —                    | The use of interactive media based on iSpring Suite 9 had a significant effect ( $t = 4.90 > 1.70$ ) on students' learning outcomes.              |
| 11 | Haris<br>Munandar,<br>Aris Doyan,   | Increasing Motivation<br>to Study Physics<br>Using PhET Media on  | 2023 | PhET                  | Mechanical<br>Energy | The application of PhET virtual media positively impacts students' engagement,  |

| No | Author(s)  | Title   | Year | Media   | Material | Findings   |
|----|--|---|------|---|----------|--|
| 12 | Susilawati et al.<br>Irwandani,<br>Achi Rinaldi,<br>Agitha<br>Pricilia, Putri<br>Mardiana<br>Sari, Adyt<br>Anugrah | Mechanical Energy Material<br>Effectiveness of Physics Learning Media Assisted by Instagram on Students' Creative Thinking Skills | 2019 | Instagram   | –        | enthusiasm, and learning motivation.<br>Instagram-assisted physics learning media effectively improve students' creative thinking abilities.             |
| 13 | Reni Dwi<br>Puspitasari,<br>Ummu<br>Mulkiyah   | Analysis of the Use of Learning Media to Increase Students' Motivation in Learning Physics  | 2023 | Online  | –        | Online learning media increased motivation to 80% (high), compared to 40% (low) using printed materials.   |
| 14 | Annisa Syifa,<br>Al-Rashiff<br>Hamjilani,<br>Mastul  | Enhancing Students' Learning Interest through the Use of Vascak Physics Animation   | 2023 | Vascak<br>Animation   | –        | The use of Vascak animation provides an engaging and interactive experience, enhancing students' interest and understanding of complex physics concepts. |
| 15 | Febrianti<br>Utami,<br>Ardian Yoga<br>Pradana,<br>Widya<br>Bratha<br>Sheftyawan,<br>Bambang<br>Supriadi            | The Use of Wordwall Application to Improve Students' Learning Motivation in Physics at Senior High Schools                        | 2023 | Wordwall  | –        | The use of Wordwall increased high motivation by 54.29% and very high motivation by 37.14%.  |
| 16 | Sizillia<br>Noranda<br>Mayangsari,<br>Liza<br>Tridiana<br>Mahardhika   | Characteristics of Learning Media That Motivate Learners  | 2019 | Static Ball,<br>Uno<br>Cards,<br>Math<br>Domino,<br>Snake<br>Ladder<br>Math,<br>Trigonometry<br>Magic<br>Circle | Math     | Manipulative and game-based media such as math dominoes and trigonometry circles improve motivation and positive teacher-student interaction.            |
| 17 | Rahina<br>Wanodyya   | Literature Review: The Role of Learning Media in Increasing Students' Learning Motivation   | 2023 | –   | –        | Attractive learning media with diverse features and proper timing can increase students' attention span and engagement.                                  |
| 18 | Aulia Naila<br>Fauziah,<br>Dwi<br>Sulisworo  | Physics Learning Utilizing Technology to Increase Learning Interest   | 2022 | Virtual<br>Lab and e-<br>Module   | –        | Technological media such as virtual labs and e-modules significantly increase students' interest in learning physics.                                    |
| 19 | Muhammad<br>Haidir,<br>Farida<br>Farkha, Diah<br>Mulhayatiah   | The Effect of Video-Based Learning Media on Physics Learning  | 2021 | Video   | –        | Video-based media are highly feasible and preferred by students, positively influencing their learning activity.   |
| 20 | Dwi Agus<br>Kurniawan  | Analysis of the Effect of Using Learning Media on Physics Learning Interest of  | 2022 | –   | –        | Regression test results indicate a significant relationship between learning media use and students' interest in learning physics.                       |

| No | Author(s) | Title                                  | Year | Media | Material | Findings |
|----|-----------|--|------|-------|----------|----------|
|    |           | Grade X Students at SMAN 1 Muaro Jambi |      |       |          |          |

Based on the compilation of articles above, Aswara, Amanda, and Fitriani (2022) found that the use of video as an instructional medium significantly increased students' interest and conceptual understanding of pressure at SMAN 2 Sungai Penuh. Haidir, Farkha, and Mulhayatiah (2021) corroborated this finding, showing that video media make physics learning more engaging and motivate students to learn. Shintya et al. (2022) reported that using websites as physics learning media attracted students at SMAN 8 Tanjung Jabung Barat, ultimately enhancing their understanding of the physics material studied. Similarly, findings by Fauziah and Sulisworo (2022) indicated that leveraging technology in physics instruction can significantly increase students' learning interest.

Another study on interactive instructional media was conducted by Dasmu, Lestari, and Alamsyah (2020). They found that the implementation of iSpring Suite 9-based interactive learning media improved students' physics learning outcomes. Meanwhile, Kurniawan (2022) reported that the use of diverse learning media can increase the physics learning interest of Grade X students at SMAN 1 Muaro Jambi.

Maulidina and Bhakti (2020) reported that online learning media can improve students' understanding and interest in physics concepts. Similar findings were presented by Nainggolan et al. (2024), who stated that innovative instructional media can enhance students' learning motivation. Furthermore, Liza (2021) found that 3D animation-based learning media increased both interest and learning outcomes among Grade XII students at SMAN 3 Muaro Jambi. Syifa and Mastul (2023) also showed that the Vascak physics animation, used as a physics teaching aid, was effective in increasing students' learning interest.

Munandar et al. (2023) showed that the use of PhET media for the topic of mechanical energy can increase students' motivation to learn physics. Puspitasari and Mulkiyah (2023) likewise indicated that the use of instructional media significantly enhances students' motivation to learn physics. Syahropi, Hatika, and Lestari (2024) reported that the Doratoon learning media can improve students' motivation in physics. Utami et al. (2023) found that employing the Wordwall application as a learning medium increases students' motivation in senior high school physics classes. Wahyudi, Jumadi, and Eryant (2024) stated that using recycled materials as physics learning media can boost students' creativity and learning motivation. In addition, Rinaldi et al. (2019) demonstrated that physics learning media assisted by Instagram effectively improve students' creative thinking skills.

Overall, the findings indicate that video-based instructional media are effective in improving students' understanding of physics concepts and are highly favored by learners. The use of video as a learning medium enhances learning outcomes and conceptual understanding while also fostering students' interest and motivation to learn (Aswara & Amanda, 2022; Haidir et al., 2021). In addition, the use of websites as physics learning media has also proven effective; students are attracted to website-based media because they find it engaging and conducive to improving their understanding (Azzahra et al., 2022).

However, physics learning is often perceived as difficult and tedious by students, resulting in low learning interest. This is attributable to several factors, including a dense curriculum, challenging content, monotonous teaching methods, and limited connections between the material and students' everyday lives (Azzahra et al., 2022). Learning interest is a crucial determinant of academic success: students who are interested in a subject tend to be more motivated to learn, which ultimately improves their learning outcomes (Aswara & Amanda, 2022).

The integration of technology into physics instruction can increase students' interest in learning. Developing varied and innovative instructional media—such as virtual laboratories and online platforms—can make physics learning more engaging and easier to understand (Fauziah & Sulisworo, 2022). Therefore, teachers need to be more creative in designing physics lessons to make them both engaging and effective. Employing a range of teaching methods and media that align with instructional

objectives, alongside the integration of technology into the learning process, can enhance students' interest and learning outcomes (Syifa et al., 2023).

Instructional media play an important role in enhancing students' motivation and interest in learning physics. The use of video- and web-based media has been proven effective in improving conceptual understanding and learning outcomes (Aswara & Dea, 2022; Haidir et al., 2021; Azzahra et al., 2022). Engaging and interactive media can counter the perception that physics is difficult and boring, thereby increasing students' interest. In addition, leveraging technologies such as virtual laboratories and online platforms makes physics learning more varied and innovative, which in turn fosters learning motivation (Fauziah & Sulisworo, 2022). Therefore, teachers need to be creative in designing and integrating diverse instructional media to create more engaging and effective learning experiences.

## Conclusion

Instructional media play a crucial role in enhancing students' motivation and interest in learning physics. The use of media such as video and websites has been proven effective in improving understanding and learning outcomes, while making instruction more engaging and interactive. Innovative technologies, such as virtual laboratories and online platforms, also help make physics content more accessible and appealing. Accordingly, teachers should creatively design instruction that leverages a variety of media to create engaging and effective learning experiences, thereby increasing students' motivation and interest in learning.

## Conflicts of Interest

The authors declare no conflict of interest.

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