



## Modern learning media improves the quality in vocational high school

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### ABSTRACT

Technological developments encourage developments in the world of education. Learning media is an example of an aspect affected by this development. As a result, modern learning media is starting to improve education quality and impact students' learning outcomes. This study examines modern learning media to improve the quality of vocational high schools. The research data was obtained through surveys and questionnaires given to vocational high school students. The results show that most vocational high school students actively use current learning media, such as videos, animations, and digital applications. Attractive and interactive current learning media has helped students understand the subject matter and absorb information and new concepts. It can also increase students' motivation and interest in learning. Based on the results of this study, it can be concluded that the use of current learning media can positively impact students' learning. The learning media can help students understand the material, increase interest in learning, and improve learning outcomes. The importance of this study on learning media can encourage students to use the latest learning media.

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### ABSTRAK

Perkembangan teknologi mendorong perkembangan dalam dunia pendidikan. Media pembelajaran menjadi contoh aspek yang terdampak oleh perkembangan itu. Sehingga saat ini mulai banyak penggunaan media pembelajaran modern yang dapat meningkatkan kualitas pendidikan dan berpengaruh pada hasil belajar peserta didik. Penelitian ini bertujuan untuk mengkaji media belajar masa kini tingkatkan mutu sekolah menengah kejuruan. Data penelitian diperoleh melalui survei dan kuisioner yang diberikan kepada peserta didik sekolah menengah kejuruan. Hasil penelitian menunjukkan bahwa mayoritas peserta didik sekolah menengah kejuruan aktif menggunakan media pembelajaran terkini, seperti video, animasi dan aplikasi digital. Media pembelajaran terkini yang menarik dan interaktif telah banyak membantu peserta didik dalam memahami materi pelajaran, menyerap informasi serta konsep-konsep baru. Media pembelajaran masa kini juga dapat meningkatkan minat belajar peserta didik. Peserta didik merasa lebih termotivasi untuk belajar dan menyelesaikan tugas-tugas sekolah ketika menggunakan media pembelajaran yang menarik dan interaktif. Berdasarkan hasil penelitian ini, dapat disimpulkan bahwa penggunaan media pembelajaran terkini dapat memberikan dampak positif terhadap pembelajaran peserta didik. Media pembelajaran tersebut dapat membantu peserta didik dalam memahami materi, meningkatkan minat belajar, dan meningkatkan hasil belajar. Pentingnya kajian mengenai media pembelajaran ini dapat menjadi dorongan bagi pelaksana pendidikan untuk dapat menerapkan media pembelajaran secara aktif dan efektif, agar dampak positifnya dapat dirasakan.

**Kata Kunci:** media pembelajaran; model pembelajaran; sekolah menengah kejuruan

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## INTRODUCTION

Education is the primary pillar in a nation's development, where innovation in learning media plays a crucial role in enhancing the effectiveness of the teaching and learning process. In modern learning, students hold a central position as the primary focus of the learning process. The role of the teacher involves stimulating students' interest in learning, providing facilities for students, finding and developing their learning motivation, and ensuring that students' satisfaction is met. Innovation in learning media is highly needed to meet the demands of the times as a way to maximize students' potential and improve the quality of education in the digital era (Hanif, 2020). Innovation is a clever idea that creates something new through the application of specific technologies and thinking, solving problems and improving situations or processes in society (Shalikhah, 2017).

It is essential to develop learning media as an innovative approach that adapts to the changing times. One way to do this is by developing learning content that adapts to technological advancements. Teachers can provide educational media in innovative, creative, and inventive ways, utilizing technology to enhance learning outcomes and motivation (Syawaluddin et al., 2019). Additionally, success in education depends on several elements, including students, subject matter, teachers, and parents. At a minimum, teachers must have a good understanding of the material they teach and possess the skills to deliver it. (Bahri et al., 2018).

Besides educating, teachers are required to master technology, cannot refuse it, and must adapt to it. They are tasked with designing classroom spaces to be innovative, creative, and enjoyable for students (Ibda et al., 2023). Teachers are expected to create a learning environment that supports students in becoming active learners in the classroom. Appropriate learning programs are those that can support students in achieving their learning goals (Lundström & Lundström, 2021). To achieve this, it is indeed inseparable from learning media. The media serves as a bridge that connects educators and students, facilitating the achievement of learning goals. The presence of text, images, sound, animation, and video characterizes multimedia. Innovation in learning media is crucial for educators because it enhances learning by making it more engaging, interactive, lively, and meaningful (Hartati & Suhendri, 2021). In his book titled "Digital Learning," Munir states that learning will achieve the best results based on learning objectives when effective and innovative learning media are implemented.

The application of media in learning is a solution to overcome several problems related to the effectiveness of student learning. By choosing the appropriate media, students' attention to learning materials can be increased (Istiqlal, 2018). Relevant media also sparks interest and motivates students, leading to increased focus and a positive impact on the quality of learning. This is expected to enhance the participants' understanding of the learning material. According to Pakpahan et al. in their book "Development of Learning Media," learning media serve as a means of information for students through various methods, enabling them to understand the content being taught. Innovation in learning media aims to improve student learning achievement, provide motivation, and encourage optimal learning outcomes. Learning media can be a valuable tool for educators, allowing them to create compelling and engaging learning experiences for their students (Hidayah et al., 2021).

The position of media in learning elements plays a crucial role in improving the quality of the learning process, making it more engaging, enjoyable, and of high quality. Thus, the material taught can be maximally received and remembered by students (Berliana, 2021). In education, it is essential to understand the impact of using learning media on two key aspects: material comprehension and students' interest in learning. Understanding the material is a good foundation for students' ability to master key concepts in the curriculum, while learning interest influences the extent to which students engage in the learning process and how they voluntarily seek additional knowledge. In Communication Education, it is not limited to the interaction between students and teachers but also includes access to various

communication resources that can be accessed through computers, mobile phones, or tablets. E-books, lecture recordings, and short clips are examples that support communication-based learning, such as Just-in-Time Teaching.

SMKN 3 Bandung, as one of the upper secondary educational institutions, is not immune to the development of learning methods that incorporate technology. Besides being an opportunity, this also presents a unique challenge to continuously create more modern and efficient learning methods that evolve with technological advancements. One example of this, as demonstrated in previous research, is the use of the YouTube platform in the form of podcasts as a learning method to attract student enthusiasm in teaching and learning activities for Basic Computer and Network material. From that research, it was found that there was an improvement in learning outcomes in the cognitive, affective, and psychomotor aspects of podcast-based learning from YouTube (Wijayanto *et al.*, 2020).

Research on learning media has been conducted extensively. One of these is a study that conducted a systematic literature review of mathematics learning media in the current digital era, explicitly focusing on concrete and digital learning media. Khaerunnisa and Ilmi reviewed 30 relevant pieces of literature. They found that the advantages of using concrete learning media are improved problem-solving skills, creative thinking abilities, and visual thinking in students (Khairunnisa & Ilmi, 2020). Another study examined the literature related to the use of multimedia learning media in technical education. Multimedia learning media is one of the trends in educational innovation and has the potential to improve the quality of the technical education process (Salsidu *et al.*, 2018).

Unlike previous research, this study focuses on the role of learning media at SMKN 3 Bandung. This study aims to explore the role of learning media in improving learning at SMKN 3 Bandung. By examining the role of learning media at SMKN 3 Bandung, effective learning strategies can be developed to enhance students' quality learning experience, particularly those that can be applied within SMKN 3 Bandung itself.

## LITERATURE REVIEW

### Learning Media and Technological Development

Learning media is an intermediary used by humans to convey messages, ideas, information, and knowledge. In line with this, learning media serve as intermediary tools for delivering content in the learning process, helping to establish effective communication between teachers and students (Hada *et al.*, 2021). Therefore, it can be said that learning media refers to anything that stimulates learning activities (Syamsiani, 2022). In this case, learning media must be developed according to the needs of students, namely, easy to use, easy to access, and able to enhance students' understanding process (Nugraha & Novaliyosi, 2023).

Learning media is becoming increasingly diverse over time, encompassing not only traditional learning media but also the development of interactive learning media that leverage technological advancements (Khairunnisa & Ilmi, 2020). Currently, the increasingly sophisticated technological developments naturally create a diversity of teaching media that can be utilized. Learning media is described as a variety of tools, such as books, videos, cassettes, photos, graphics, television, films, and computers, used to communicate learning materials. In other words, learning media plays an important role as a tool to support the learning process and explain the meaning of the message or knowledge that is intended to be conveyed.

Learning media is becoming increasingly varied, not just revolving around video or image-based learning. Currently, the use of mobile applications has also become an effective solution in the educational world. Mobile learning enables learners to study interactively and flexibly, potentially enhancing the quality and

effectiveness of their learning (Husaen & Yuliani, 2023). With an application that provides learning materials and practice questions, students have flexible access to learning materials and practice questions at any time and from any location. This flexibility allows for a more personalized learning approach, tailored to the pace and preferences of each learner (Thong *et al.*, 2023).

In a broader context, technological advancements have transformed the educational paradigm. Technological developments have created opportunities for innovation in video-based learning media and other technologies, opening doors to more interactive, engaging, and relevant learning (Fricticarani *et al.*, 2023; Romadanti, 2023). Now, learners have access to learning materials in various locations and at flexible times, incorporating visual and auditory approaches to enhance their understanding. The implementation of technology in learning media makes it not just a tool, but a catalyst for learning (Maulido *et al.*, 2024). By wisely utilizing learning media, educators can create a dynamic and adaptive learning environment, bridge the gap between complex concepts and student understanding, and guide students toward a deeper understanding of knowledge. Therefore, investing in the development and effective use of learning media has become a necessity in creating a generation that is skilled and ready to face the continuous changes in the world of education.

### **The Impact of Current Learning Media on Improving Students' Understanding of the Material**

Three factors determine success in the learning process: the content of the message, the method of message delivery, and the characteristics of the message recipient. Based on this, it can be understood that learning media is one of the key factors in determining learning success, as it serves as the "messenger" in the learning process (Nurrita, 2018). Additionally, based on the third factor, it can be understood that learning media must also be adapted to the characteristics of the message recipient, in this case, the students. Considering the needs and technological advancements, learning media must also be adapted accordingly.

In future education, the learning environment requires integration between conventional face-to-face teaching methods and technology, as well as online learning supported by an institutional structure that aligns to ensure high-quality learning processes (Cobo-Rendón *et al.*, 2022). The use of learning media aims to provide educators with convenience in delivering learning materials while also making it easier for students to understand important concepts that must be grasped during the learning process. Learning media must effectively fulfill their role, namely to facilitate, concretize, and motivate educators so that students can easily understand concepts that may be difficult to grasp in learning (Jannah *et al.*, 2023; Indriani & Abidin, 2022).

The use of media in the learning process offers practical benefits, specifically helping students overcome the limitations of their prior experiences. As technological advancements continue, education is undergoing significant changes with the adoption of engaging and interactive learning media (Melati *et al.*, 2018). Current learning media have greater appeal to students (Muthi *et al.*, 2023; Rosyiddin *et al.*, 2023), and the diversity of formats, multimedia content, and interactivity encourages student engagement in the learning process. This makes them enthusiastic and focused on the material being taught. Learning media utilizes graphs, videos, animations, and other visual elements that help learners understand complex concepts. Many current learning media can be adapted to the individual understanding level of the students. This allows learners who need additional help or higher challenges to learn at their own pace.

The specific objectives of using learning media include: (1) Stimulating students' interest in learning by providing diverse and engaging learning experiences; (2) Developing students' technological attitudes and skills; (3) Creating memorable learning experiences for students; (4) Increasing the effectiveness of the learning process; (5) Encouraging students to want to learn. The application of current media in the learning process aims to increase students' interest and motivation to learn, reduce verbalism, encourage

systematic and consistent reasoning, and cultivate values. Student learning outcomes and motivation are influenced by innovative learning media that enhance student quality, facilitate learning, and make lesson materials easier for teachers to understand (Wulandari et al., 2022). Learning media must be engaging to encourage student participation in the learning process.

The latest learning technologies can also help the learning process. To achieve the school's teaching objectives, educators must choose the right learning media. As for some actions that can be taken to make students more interested in learning using the latest learning media, they are (1) The use of interactive technology, the use of technology in learning media is very beneficial for learning and increases students' interest in learning. Learning platforms and educational applications are more interesting and interactive (Wulandari et al., 2017). To make lesson explanations more visual and enjoyable, use media such as images, videos, and audio; (2) Project-Based Learning, which will make students more creative, challenged, independent, and engaged; (3) Personalized Learning, digital learning is engaging and increases effectiveness in a learning process; (4) Educational Games, teaching in a fun way that enhances critical thinking skills and helps solve problems. Students are more interested in learning if they use more up-to-date and engaging learning media. Technological advancements continue to progress, making it important to stay updated with the latest trends in learning media to remain relevant and effective.

### **The Role of the Latest Effective Types of Learning Media**

In line with the concept of modern learning, the success of learning activities is greatly influenced by student activity and the learning media used. In the current era, children are growing up with high access to information, so the role of teachers needs to shift from being the sole source of information to being a facilitator. In the learning process, students must be actively engaged to understand and master the learning material. Learning aims to achieve positive changes in individuals' character or behavior through practice or experience (Keswari & Abadi, 2022). Learning media must be effective and efficient to increase students' interest in learning. Providing efficient and enjoyable learning media is the primary goal of improving the quality of learning (Iauc et al., 2020). Some roles of effective current types of learning media are:

#### **1. Learning Videos**

Video media combines images and sound, and can be played repeatedly, making it easier for students to learn at any time. This keeps students active and improves their learning. Videos are often used as an educational aid to stimulate students' interest and motivation. By watching videos, students listen to music and see photos.  
(Iauc et al., 2020).

#### **2. E-book**

E-books make it easier for students to find relevant learning materials that can be accessed through gadgets and carried anywhere. With e-books, students are not lazy or bored. They enhance students' understanding of the material and foster their interest in the learning process. E-books can provide students with a comfortable and portable way to access learning information.  
(Sari & Wardani, 2020).

#### **3. Interactive Simulations**

Educational games and simulations allow learners to apply skills in a relevant context. This also presents opportunities to increase learners' desire and participation in the learning process.

#### **4. Mobile Applications**

Mobile applications can help students learn better, such as Quipper and Kalase schools. They are more interested in learning because the material is equipped with engaging and interactive questions with sound and video.

#### 5. PowerPoint (PPT)

Using PowerPoint enhances learning and fosters a positive attitude toward technology. Teachers or students can use this presentation media to present learning materials and practices ([Uzun & Yildirim, 2018](#)). Providing slide facilities that can accommodate the topics to be presented to the students. A slide can be modified by dragging with an animation tool. Additionally, features such as front images, sound, and effects can be used to create effective slides that cater to students' diverse learning modalities.

## METHODS

This research employed a survey method with a quantitative approach, aiming to investigate the role of learning media in enhancing learning at SMKN 3 Bandung. SMKN 3 Bandung was chosen as the research subject because the school faces the demand to develop more modern and efficient teaching methods, in line with technological advancements. Innovation in learning media has become crucial for meeting the needs of our time and improving the quality of education in the digital age.

The research involved students from SMKN 3 Bandung. This data analysis process is conducted to systematically organize and interpret the data collected from observations and questionnaires. The data collection method involves two stages: observation and the use of questionnaires. The collected data were then examined through a series of steps, including collection, reduction, presentation, verification, and conclusion-making.

## RESULTS AND DISCUSSION

### The Use of Current Learning Media at SMKN 3 Bandung

The latest learning media at SMKN 3 Bandung are used intensively and have a positive impact on students' understanding of the material, their interest in learning, and their preparation for exams/assignments. The high level of interactivity and confidence in the innovation of learning media reflects the effectiveness of this media in achieving students' academic goals. The learning media used in this manner can help improve the quality and effectiveness of delivering learning content ([Yasin & Novaliyosi, 2023](#); [Ridwan et al., 2021](#)). This is evident from the research data obtained. Students generally stated that during the learning process, current learning media was one of the alternative media used. These diverse media can increase students' learning motivation ([Aurelliana & Nugraha, 2022](#)), including animated videos on various online platforms ([Adnan & Istiqomah, 2022](#); [Haq & Irawati, 2022](#)) and audio in the form of regular recordings or podcasts ([Aurelliana & Nugraha, 2022](#)). These media influence students as interactive media types to increase their interest in the learning process ([Putra & Salsabila, 2021](#)).

## The Impact of Current Learning Media on Material Comprehension

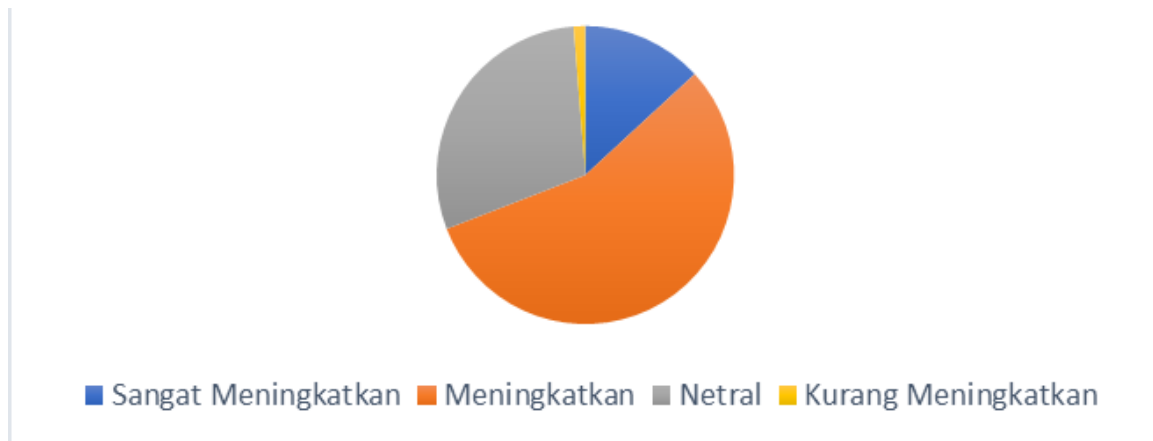


**Figure 1.** Percentage Diagram of Subject Matter Questions  
*Source: Research result, 2023*

Based on the data obtained and presented in **Figure 1**, almost half of the students at SMKN 3 Bandung, specifically 59.4% of the students, felt that the learning media "helped" them understand the subject matter. This is indicated by the majority of students feeling that this learning media can provide positive benefits in the learning process. The use of this learning media is very effective in improving understanding of the material and providing additional learning support for most students. Additionally, data showed that the majority of students, approximately 28.1%, felt neutral about the use of learning media. Students did not yet feel a significant impact, either positive or negative, from using this learning media. This neutral feeling can be influenced by factors such as variations in the use of learning media, learning styles, or other factors. Additionally, approximately 9.4% of students felt that the use of learning media hindered their understanding of the subject matter.

The role of modern learning media, which come in diverse forms, in enhancing students' understanding of the material has also been explored in previous studies. For example, previous research showed that students' understanding of learning material is highly influenced by the use of video learning media (Suasty & Hadi, 2020). An increase in student learning outcomes is a clear demonstration of this. Understanding the material and learning outcomes are two things that are closely interconnected. The use of learning media can create a more interactive learning environment, which in turn enhances students' understanding of the material and leads to improved learning outcomes (Gabriela, 2021). However, under certain conditions, the use of learning media is considered ineffective, as evidenced by previous studies that have shown a negative response from students toward online learning media. This is influenced by the Covid-19 pandemic, which makes students feel bored and less enthusiastic, leading them to prefer using learning media directly in the classroom (Maulidina & Bhakti, 2020).

### Increasing Learning Interest Through the Latest Learning Media

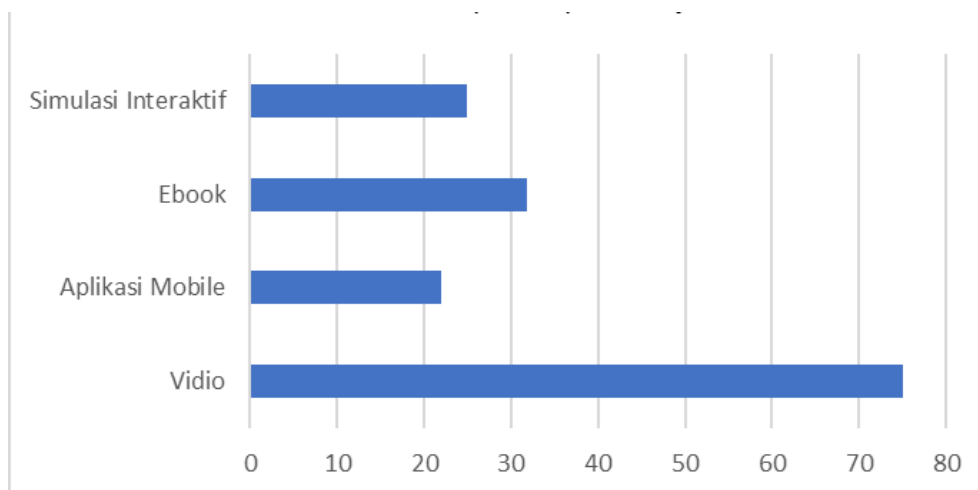


**Figure 2.** Percentage Diagram of Learning Interest Questions  
*Source: Research result, 2023*

Based on the data obtained and presented in **Figure 2**, it was found that approximately half of the students, 65.5%, felt that the use of this learning media had helped increase their learning interest. This is very positive and indicates that the majority of students felt encouraged to study more intensively and enthusiastically because of the learning media used. The majority of students, around 28.1%, felt neutral about the current learning media, which could indicate that its impact was not yet strong enough to change students' learning interests or that other factors were influencing their learning. Additionally, some students felt that the learning media did not increase their interest in learning, accounting for approximately 6.3%. Although the number is relatively small, approximately 6.3% of students still feel that the use of this learning media did not increase their interest in learning.

Overall, the data from this questionnaire indicates that the majority of students feel the use of learning media has increased their interest in learning. Findings from previous studies support this result. As in previous research, it was stated that interesting and varied learning media can increase students' interest in participating in learning (Setyorini & Wulandari, 2021). This is a positive result because high learning interest can contribute to better learning achievement. In this case, learning media is developed to increase students' interest in learning (Alifah et al., 2023), as is learning media developed in accordance with technological advancements, such as Augmented Reality (AR), mobile learning, and others (Baihaki et al., 2023; Socrates & Mufit, 2022).

### The Role of the Latest Effective Types of Learning Media



**Figure 3.** Percentage Diagram of Effective Learning Media Questions  
*Source: Research result, 2023*

Based on the data obtained and presented in **Figure 3**, the majority (75%) consider video to be the most effective type of current learning media. This is likely because video can present lesson material in an engaging visual way, making it an effective tool for explaining complex concepts and making them easier to understand. This indicates that video has great appeal in helping students understand lesson material. Additionally, the use of video enables the visual and audiovisual presentation of information, creating a more interactive and engaging learning experience that helps students understand and absorb the lesson material more effectively. Video provides teachers with flexibility to integrate various elements, such as animation, narration, images, and sound, which can enhance the appeal and ease of understanding in learning materials.

Approximately 21.9% of students consider mobile applications effective in supporting their learning. Although the percentage is lower than that of videos, it is still significant and indicates that the use of mobile applications is considered beneficial. This demonstrates that the ability to learn on mobile devices is crucial for some learners, as these mobile applications enable flexible and accessible learning at any time and from anywhere. Mobile applications also often offer a variety of interactive features, such as quizzes, educational games, and practice questions. This creates a more engaging and dynamic learning experience.

Besides mobile applications, over a quarter of the students, 31.3%, chose e-books as an effective type of learning media. E-books provide access to digital text that can be easily accessed, and they also allow students to refer to lesson materials at any time and from anywhere. In an increasingly connected world, learners can read and study from various locations without needing to carry physical books. Interactive

Simulation 25% considers interactive simulations an effective type of learning media, indicating that interactivity can benefit learning.

Based on the data obtained, the most effective current type of learning media is video, as it is the dominant primary choice. Additionally, mobile applications, e-books, and interactive simulations play a crucial role in learning. With these results, educators can select and develop learning materials that are suitable for students, thereby enhancing the effectiveness of learning. The use of video in learning media has been widely implemented and researched in previous studies. Previous research has shown that video-based learning media have a positive impact on students' learning activities (Haidir et al., 2021). This is supported by the results of previous studies, which indicate that learning media is used to overcome students' difficulties in understanding mathematical logic material (Priyanda, 2019). Besides videos, the use of other learning media also has a positive impact on students. As in the research by Sulistio and Qohar (2020), which revealed that the use of Android-based applications can be utilized validly and practically in learning by both students and teachers.

## **CONCLUSION**

The use of the latest learning media at SMKN 3 Bandung has had a very significant positive impact on students. More than half of the students use it regularly, indicating strong adoption of technology in the learning process. Positive impacts include improved understanding of the material, increased learning interest, and assistance for students in preparing for exams and assignments. The most effective type of media is video, with its strong visualization capabilities, followed by e-books, which offer easy access, and interactive simulations, which enhance learning interactivity. This learning media creates a more engaging and effective learning method. Additionally, the use of current learning media also contributes positively to students' academic achievement, with an increase in students' understanding of the material, interest in learning, and improved learning outcomes. The use of the latest learning media is an effective means of increasing students' enthusiasm for learning. The types of learning media used can be adjusted to the interests of the students in the classroom to ensure its effectiveness.

## **AUTHOR'S NOTE**

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