Journal of Educational Sciences
Journal homepage: https://jes.ejournal.unri.ac.id/index.php/JES

P-ISSN 2581-1657
E-ISSN 2581-2203

Students' Views on Multimedia in Differentiated Learning of Pancasila Education at SMA Muhammadiyah 10 Surabaya

Pandu Rudy Widyatama*[1], Muhajir[2], Nuril Huda[3]
[1,2,3]*Educational Technology, University of Dr. Soetomo Surabaya, East Java, 60118, Indonesia*

ARTICLE INFO

Article history:

Received: 27 Dec 2024
Revised: 15 March 2025
Accepted: 20 March 2025
Published online: 24 March 2025

Keywords:

Student Views
Multimedia Usage
Differentiated Learning
Pancasila Education
SMA Muhammadiyah 10 Surabaya

* *Corresponding author:*

E-mail: pandu.ruw@gmail.com

Article Doi:

Doi: https://doi.org/10.31258/jes.9.2.p.782-801

A B S T R A C T

The research is based on challenges in learning Pancasila Education which is often considered monotonous and less attractive to students, so innovation in learning methods is needed. This study aims to explore how students assess the effectiveness of the use of multimedia in differentiated-based Pancasila Education learning at SMA Muhammadiyah 10 Surabaya. This study uses a qualitative descriptive approach using a case study method, involving six students, two teachers, and the principal as research subjects. Data was collected through interviews, participatory observations, and documentation, then analyzed using the Miles and Huberman technique. The results of the study show that the integration of multimedia in differentiated learning can realize student involvement in the process of learning Pancasila values. Multimedia such as videos, images, and interactive platforms are effective in accommodating various student learning styles, both visual, auditory, and kinesthetic. However, some technical challenges such as unstable internet connections and projector device issues are still a hindrance. In conclusion, the use of multimedia in differentiated learning has a positive impact, but improvements in technological infrastructure and teacher training are needed to optimize its effectiveness. The suggestion for schools is to work to improve multimedia facilities and ensure adequate tools to support inclusive and effective learning.

1. Introduction

Pancasila education has an important role in shaping students' character, national attitudes, and social awareness. Through this subject, students are expected to understand the basic values of the Pancasila state applied in their daily lives (Pertiwi et al., 2021). However, in its implementation, Pancasila Education still faces various challenges, especially in terms of learning methods used by teachers (Gustifal et al., 2024). The learning process that is dominated by lecture methods and theoretical approaches often tends to make students less active in following the learning process. This non-interactive learning model often makes students bored, so that their involvement in learning Pancasila values becomes less than optimal (Apriza et al., 2023; Dananjaya, 2023). This requires the need for

innovation in the learning process, especially to realize more active student involvement.

Along with the development of technology in the world of education, multimedia is starting to become an alternative solution in increasing the effectiveness of learning. The use of multimedia that allows the delivery of more interesting material with a combination of visual, audio, animation, and interaction elements is expected to clarify concepts that are difficult for students to understand (Livia, 2024; Wibowo, 2023). In Pancasila Education, this multimedia can be used to present material more dynamically through presentations, learning videos, and other interactive content that allows students to better understand the implementation of Pancasila values in their daily lives (Ramadhan et al., 2023). Multimedia theory proposed by Richard E. Mayer, which focuses on multimedia principles to realize an active learning process, can be implemented to create more effective learning through the simultaneous use of textual, sound images, and animation (Mayer, 2002). The use of these elements will help students in connecting abstract concepts with more concrete visual images, so that it is easier for students to understand the values of Pancasila and implement them in their lives.

The use of multimedia is also expected to increase the attractiveness of learning so that students are more actively involved and able to understand the learning material better compared to conventional methods that are one-way only (Firmansyah, 2024). In addition, the application of differentiated learning was put forward by Carol Ann Tomlinson who emphasized the importance of adapting teaching methods to the individual needs of each student (Tomlinson, 2014). This approach can be applied by utilizing multimedia to provide variations in the delivery of material that is in accordance with students' learning styles, interests, and academic readiness, so that later the learning process becomes more relevant and interesting for each individual and is able to side with students. This effort provides opportunities for students to learn without leaving anyone behind.

SMA Muhammadiyah 10 Surabaya is one of the schools in the city of Surabaya that implements an independent curriculum and has a heterogeneous background of students in terms of academic ability and learning style (Dapodik, 2025). This condition requires a more flexible learning approach to meet the diverse learning needs of its students. One of the strategies that can be applied is multimedia-based differentiated learning (Purnawanto, 2023). This learning concept emphasizes the importance of adapting teaching methods to the individual needs of each student so that they obtain a learning experience that suits their respective learning styles and interests (Halimah et al., 2023). The application of multimedia-based differentiated learning in schools is expected to be able to realize student involvement in learning Pancasila Education materials, as well as create a more interesting and interactive learning atmosphere and according to their respective learning needs.

Previous studies on differentiated learning have shown that this approach can effectively strengthen students' understanding in the learning process, as stated

(Agustiana et al., 2023) stated that differentiated learning has a good impact on teachers and students in learning Pancasila and Citizenship Education. Because in the learning process, students learn according to their learning preferences, in accordance with aspects of differentiated learning, including differentiation of content, processes, and products so that students become comfortable and willing to learn. Studies on multimedia learning, such as those conducted (Rehi et al., 2021) that the application of multimedia in PPKn learning can increase students' motivation and enthusiasm because of the interactive media that makes them enthusiastic about learning, so that with the existence of diverse media, students are actively and effectively involved in the learning process.

Although this learning approach offers many advantages, its effectiveness still depends heavily on how students receive and respond to the method. Not all students have the same access to technology, and not all students are comfortable with digital-based learning methods (Sundari, 2024; Zakaria et al., 2023). Some students may find it easier to understand the material through traditional approaches, while others are more interested in multimedia-based learning models. In addition, the level of readiness of students in operating technology as a tool to help the learning process also varies (Magfiroh et al., 2025). Some students may have difficulty using multimedia devices optimally, especially if they are not familiar with technology as a supporting part of their learning process (Nurhidayah, 2023). Understanding how students assess the effectiveness of multimedia in differentiated learning is an aspect that needs to be further researched.

Although previous research considers that the existence of multimedia and the application of differentiated learning have proven to be effective, this research has a novelty that will combine multimedia theory and differentiated theory in the context of Pancasila Education at SMA Muhammadiyah 10 Surabaya. The uniqueness of this research lies in the application of multimedia, which is not only a visual aid, but also able to support learning approaches based on different learning styles and interests of students. By using multimedia in the differentiated learning process, it is expected to meet the diverse needs of students, both more visual, auditory and kinesthetic (Startyaningsih et al., 2024). In addition, this research will also provide an in-depth picture of the challenges faced by students in using multimedia as part of their respective learning process, as well as how it affects their motivation to learn.

In addition to the factor of student readiness, there are other factors that also affect the effectiveness of the implementation of multimedia in differentiated learning, such as the readiness of teachers to develop and implement appropriate learning media, the availability of technology infrastructure in schools, and support from the learning environment (Ali et al., 2024; Wibowo, 2023). Teachers who are learning facilitators have a very important role to ensure that the use of multimedia is not only a complement to the learning process, but also able to support the learning journey of students in understanding the material being studied (Sari et al., 2022). The availability of technology infrastructure in schools is also a determining factor for the effectiveness of the implementation of this

method. Without the support of adequate devices, the use of multimedia in differentiated learning will not run optimally (Zaenab, 2024). Analysis of the factors that support and hinder the implementation of this approach still needs to be carried out to provide a more comprehensive picture of its effectiveness in the context of Pancasila Education learning in its application in schools.

This study aims to explore how students assess the effectiveness of the use of multimedia in differentiated-based Pancasila Education learning at SMA Muhammadiyah 10 Surabaya. The focus of this research is to understand the extent to which this method can support and involve students in the process of learning Pancasila values and will identify factors that support or hinder the effectiveness of this approach from the student's point of view. By understanding the student's perspective, it is hoped that this research will be able to provide recommendations for the development of more effective learning strategies that meet the needs of students in the digital era and provide real changes in the educational journey. The benefit of this research is to provide new insights into how the integration of multimedia in differentiated learning increases the effectiveness of Pancasila Education learning, as well as provide guidance for the development of more relevant and adaptive learning methods in the future.

2. Methodology

This study uses a qualitative descriptive approach with a case study method to be able to explore students' views on the use of multimedia based on differentiated learning in Pancasila Education learning at SMA Muhammadiyah 10 Surabaya. The qualitative approach was chosen because it allows researchers to gain an in-depth understanding of students' experiences related to the use of multimedia in their learning process. In this study, the case study used to explore more specifically how the process of using multimedia and differentiated learning is applied in the classroom and its impact on students' understanding and involvement in learning Pancasila values material (Ridlo, 2023; Sugiyono, 2021). The main purpose of this study is to explore the extent to which students feel helped using multimedia in learning and how differentiation-based learning affects their experience in understanding the values of Pancasila. This research focuses on the impact of multimedia use on student engagement and understanding in the subject of Pancasila Education, as well as identifying the factors that support and hinder the effectiveness of this approach from the perspective of students.

This study involved a subject consisting of six selected students, where two students were selected from class X, two students from class XI, and two more students from class XII at SMA Muhammadiyah 10 Surabaya. The selection of students was carried out using the convenience sampling technique (Golzar et al., 2022; Stratton, 2021), namely a data selection technique that considers the ease of access to respondents who are active in the multimedia-based learning process with multimedia in Pancasila Education lessons. This selection criterion aims to get students who have direct experience in using multimedia as part of Pancasila

Education learning. In addition, this study also involves the principal and two teachers of Pancasila Education subjects to provide additional perspectives related to the implementation of multimedia-based learning, both from the side of education managers and subject teachers. The selection of principals and teachers is carried out because they have a deep understanding of the policies and implementation of learning methods in the school. The location of this research was carried out at SMA Muhammadiyah 10 Surabaya, on Jl. Genteng Muhamadiyah No.45, Genteng, Genteng District, Surabaya, East Java 60275. This school was chosen because it has implemented a multimedia-based learning method in the subject of Pancasila Education, making it the right place to explore the effectiveness of such learning.

Data collection was carried out using three main techniques, namely in-depth interviews, participatory observation, and documentation (Sugiyono, 2021). In-depth interviews were conducted with students to explore their views on the learning experience of using multimedia in Pancasila Education learning in the classroom. This interview guideline is designed in a semi-structured manner to allow students to provide a broader response regarding their experiences about the use of multimedia and differentiated learning. The observation itself was carried out to see firsthand how students interact with multimedia in the classroom and how they are involved in learning. Documentation includes learning activities, lesson plans for teaching modules to support the implementation of learning, and multimedia materials used by Pancasila Education teachers in the classroom.

The data analysis in this study uses techniques from Miles and Huberman, which consists of four main stages: data collection, data reduction, data presentation, and conclusion drawing (Sugiyono, 2021). The first stage, data collection, involves various techniques, such as in-depth interviews with school principals, teachers of Pancasila Education subjects, and students who are actively involved in multimedia-based learning. In addition, direct observation in the classroom, as well as the collection of documents such as teaching modules, multimedia materials, and supporting documents.

After the data collection process, the next stage is data reduction. At this stage, the collected data will be selected and grouped based on the main themes related to the effectiveness of the use of multimedia in learning, students' views on methods, supporting and inhibiting factors. This reduction aims to filter information and focus analysis on data that meets the research objectives. Furthermore, in the data presentation stage, the grouped data is presented in a descriptive narrative that describes the findings. In addition to the narrative, this presentation is also equipped with data visualization in the form of graphs and images to clarify the relationship between the effectiveness of multimedia-based learning, making it easier for readers to understand. Finally, in the conclusion drawing stage, the researcher analyzes the patterns that emerge from the data that has been selected and presented. Conclusions will be drawn based on existing findings.

To ensure the validity of the data in this study, two complementary techniques were used, namely data triangulation and member checking (Husnullail et al.,

2024; Sugiyono, 2021). Data triangulation is performed by comparing and confirming results obtained from various sources, such as principals, teachers, and students, and using different data collection techniques, including interviews, observations, and documentation. By comparing data from different people and different methods, researchers can ensure that the findings obtained are not distorted by a single source or technique, as well as verify the data. The views obtained from interviews with students regarding multimedia-based learning will be compared with the results of observations made in the classroom and materials used in learning. The process aims to deepen and strengthen the findings obtained and reduce the potential for bias that can arise from certain data sources or collection techniques. In addition, to ensure accuracy in data interpretation, member checking is carried out. This technique involves returning the transcript to the interviewed student to ask for confirmation of whether the researcher's interpretation is correct and as intended.

3. Results and Discussion

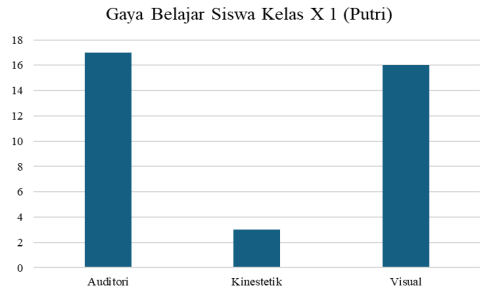
a. Integration of Multimedia Use in Differentiated Learning of Pancasila Education in Muhammadiyah 10 Surabaya High School Students

The integration of multimedia in differentiated learning of Pancasila Education at SMA Muhammadiyah 10 Surabaya has shown a structured effort and is in line with the principle of the independent curriculum which gives teachers the freedom to choose and design learning methods that suit the needs of students in their learning process. The independent curriculum itself, which emphasizes the importance of using information technology in creating a more dynamic and flexible learning experience, provides space for teachers, especially Pancasila Education teachers, to design a learning process that accommodates various learning styles of students.

This is also supported by (Peraturan Menteri Pendidikan, Kebudayaan, Riset, Dan Teknologi Nomor 16 Tahun 2022 Tentang Standar Proses Pada Pendidikan Anak Usia Dini, Jenjang Pendidikan Dasar, Dan Jenjang Pendidikan Menengah, 2022), which states that *"In Chapter II about Learning Planning in the section on Ways to Achieve Learning Goals in Article 7, Number 2 which is related to learning strategies designed to provide a quality learning experience, it must be implemented by, namely in point d. Using information and communication technology devices."* So that in developing a standardized learning process in accordance with the policy and being able to provide a quality learning experience, in planning the learning, a teaching teacher, especially a Pancasila Education teacher, must be able to use information and communication technology tools to support the process of teaching and learning activities so that they are able to run efficiently and effectively and can meet the learning needs of their respective students. This was also strengthened by the results of an interview with the principal represented by the principal for curriculum (A.N.S.M.) who stated *"This school has referred to the regulations of the Minister of Education and Culture in the process of implementing its education in order to align with the*

needs of the digital age as it is today and also implement an independent curriculum so that teachers are more flexible in accommodating diverse learning models."

Teachers of SMA Muhammadiyah 10 Surabaya have taken advantage of this policy to integrate various multimedia devices in Pancasila Education learning, which not only focuses on the content of the material but also learning processes and products that are in accordance with the different preferences and learning styles of their students. Based on the learning style assessment data provided by SMA Muhammadiyah 10 Surabaya which shows significant differences in the girls' class and the boys' class, where the students of the girls' class themselves tend to have a visual and auditory learning style as shown in Figure 1. and Figure 2. next.



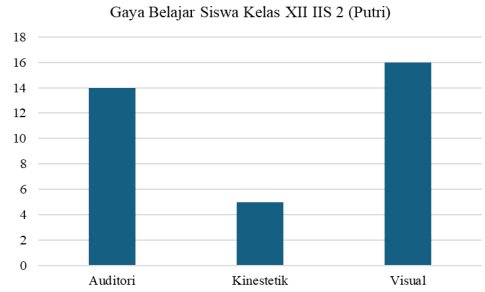


Figure 1. School Assessment related to the Learning Style of Class X 1 Students (Girls); Figure 2. School Assessment related to the Learning Style of Class XII IIS Students (Girls)

Based on the learning style assessment data of students in class X 1 (Girls), which shows that the dominant learning style in class X 1 (Girls) is the auditory learning style with a total of 17 students, which shows that most students prefer learning through listening. The kinesthetic learning style has a very small number, only 3 students, indicating that very few students prefer to learn by doing or moving. While the visual learning style has a total of 16 students, it shows that many students prefer to learn through pictures or other visuals.

Overall, the learning style of students in the class has an auditory-visual tendency where students prefer to listen and pay attention to the delivery of material through the lecture method or the use of songs/audio/video as well as through the projection of pictorial presentations or interactive learning videos. This data is also in line with the assessment of the learning style of grade XII IIS 2 (Girls) students, although slightly different but not significant, which shows that grade XII IIS 2 (Girls) students show auditory learning styles, which are as many as 14 students. The kinesthetic learning style is still few, only 5 students, the visual learning style is 16 students. The data reflects the tendency that most students, especially the girls' class, have auditory and visual learning style tendencies. This is inversely proportional to Figure 3. next.

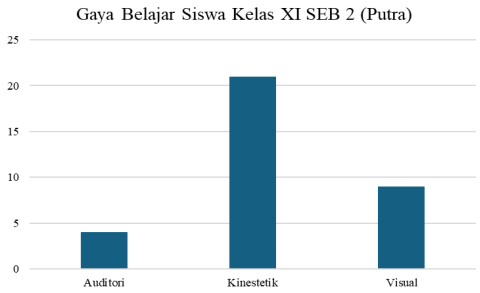


Figure 3. School Assessment related to the Learning Style of Class XI SEB Students (Boys)

Based on the learning style assessment data of students in grade XI SEB 2 Boys, there is a significant difference compared to Figure 1. and Figure 2. That kinesthetic learning style became the most with 21 students, which indicates that most students in this class prefer to learn through hands-on experience or physical activity. Meanwhile, the visual learning style has 9 students, fewer than the kinesthetic, but more than the auditory style, which has only 4 students. The striking difference here is that in class XI SEB 2 (Boys), for the kinesthetic learning style is very dominant, while auditory has a much lower number compared to the previous two classes.

So, Figure 1. and Figure 2. Showing a preference for a stronger auditory learning style, with very small kinesthetic forces. Visuals have a significant amount, albeit lower than Auditory. Meanwhile, Figure 3. shows a major shift, in which the kinesthetic learning style becomes dominant, with very minimal auditory. This reflects the difference in learning styles between the girls' class (X 1 and XII IIS 2) and the boys' class (XI SEB 2), which tend to be more active and require more direct or practical learning. In response to this student learning assessment data, Pancasila Education teachers in the girls' class (X 1 and XII IIS 2) use the lecture method combined with PowerPoint presentations that display visuals such as pictures and animations, as well as learning videos from the YouTube platform to enrich the student learning experience. This is in line with the results of observations when in class XII IIS 2 Girls as shown in Figure 4. next.

Figure 4. Pancasila Education Teacher (I.D.L.) Delivering Learning through PowerPoint Presentations Using Projectors

This Pancasila Education teacher in class XII IIS Putri uses PowerPoint presentations to provide learning materials to students in a visual learning style, students more easily understand the material through pictures or videos, while the oral explanations given by the teacher meet the needs of auditory learning style students. This shows how the Pancasila Education teacher integrates the multimedia principles of Mayer, which combines images and text to increase the engagement and understanding of his students.

Based on the interview with the teacher, it was stated that *"When I carry out learning, there is usually a plan, I first look at the school assessment so that I can adjust the learning, like in the girls' class it is usually calm and the child obeys, I just use lectures and there are presentations, they can also receive the material well. I also apply that to other women's classes."* This explains that the Pancasila Education teacher uses the lecture method in line with the use of multimedia, in addition to making students more comfortable in the learning process, it also supports a differentiated learning process that refers to the independent curriculum.

She added , *"Even though I use lectures in the girls' class, I still innovate with other platforms, such as Google Forms, Moodle-based SMAMX LMS, and Quizizz. I usually use Quizizz as a means of evaluating my students to measure their understanding, besides that I also see that all of them already have cellphones so that they are not made to play social media and games, so I invite them to continue learning while playing with the Quizizz platform."* From this statement, teachers do not only use the same method repeatedly such as lectures and presentations but still must continue to innovate so that students do not get bored easily and they are also able to take advantage of their technology such as their cellphone devices. This can be seen in the activity of doing assignments based on Quizizz as shown in Figure 5.

Figures 5. Students Doing Online Assignments/Digital Quizzes from Pancasila Education Teachers (I.D.L.) Using his HP Device

Teachers take advantage of the use of students' cellphone devices to access digital learning platforms, such as Quizizz or other online quizzes, which allow students to work on assignments and quizzes independently. By utilizing cellphone devices that students are familiar with, this activity provides flexibility for students with auditory and visual learning styles as well as kinesthetics to learn anytime and anywhere (Ibda, 2002). For example, students can access interactive quizzes on Quizizz, which allows them to test their understanding of Pancasila Education

learning materials in a fun and interactive way. In addition, the online assignments available on the platform also provide students with the opportunity to learn at their own pace, while also providing a more independent and practical learning experience. The use of this cellphone encourages students' active participation, increases their involvement in the learning process, and provides opportunities to practice more flexibly, which ultimately increases their motivation and understanding of the material taught because it suits their respective learning styles and preferences (Kusnadi & Azzahra, 2024; Nofmiyati et al., 2023).

Slightly different from the girls' class, class XI SEB 2 (Boys), the data from the school assessment showed a significant difference, where most students tended to have a kinesthetic learning style. With 21 students who prefer to learn through hands-on experience or physical activity, the Pancasila Education teacher designed learning that is more practical and involves direct physical involvement, such as project assignments or activities that involve making works. This is very relevant to kinesthetic learning styles that tend to be more effective when students can be directly involved in activities that involve movement and physical experience.

This statement is reinforced by the results of interviews with other Pancasila Education teachers (A.J.A) who stated that *"I myself if in learning is not much different from teachers (I.D.L.) there are usually lectures and presentations, but for the method I usually use inquiry (students look for problem topics to discuss together). In addition, I often use project-based learning (project/product-based learning) and focus group discussions (FGD) because I know that male students prefer to be invited to make something and be talked to, if they are given material and told to listen, they will be crowded and even sleepy."* From this interview, it is explained that this Pancasila Education teacher invites his students to learn according to their way of thinking, they are directed to find their own problem topics which are then discussed together. After the topic of the problem is found and discussed, it is directed to make a solution product and will be expressed together in a joint discussion activity so that everyone learns from each other and has a good opportunity in the learning process (Krajcik et al., 1998; Rusman, 2017). This can be seen from the portrait of learning outcome activities made by students in grade XI SEB 2 (Boys) as shown in figure 6.

Figure 6. Male Students Who Make Poster Products Discuss the Effectiveness of the Vision and Mission of the 2025-2029 Presidential and Vice-Presidential Candidates

In this class, although visual and auditory learning styles also exist, they have a much smaller number compared to kinesthetic learning styles. Teachers in grade XI SEB 2 design assignments that allow students to directly apply the theories they learn in the form of projects, which ultimately strengthens their understanding. Through this approach, students can experience how the concepts they learn are applied in real life, enhancing their learning experience and making learning meaningful (Barus et al., 2022). By using practical activities like this, teachers can accommodate students' kinesthetic learning styles more effectively, while still providing space for students with visual and auditory learning styles to learn optimally. In addition, this school also has special activities, one of which is the SMAMX Festival (*Media Ekspresi Siswa SMAMX Surabaya Gelar Festival Tengah Semester*, 2022).

The SMAMX Surabaya Festival is an effective forum in implementing the concept of differentiated learning and the use of multimedia. This activity integrates various multimedia elements, such as the use of PC devices to present student works, cellphone devices to design works, and other devices to support student practice in activities. This festival not only displays the work of students but also provides direct experience for kinesthetic students in applying the knowledge they have learned through the creation of practical projects. On the other hand, visual students find it easier to understand and appreciate the work through interactive digital displays, while auditory students can engage through verbal explanations of the concepts and ideas behind each piece. This can be proven by the activity in Figure 7. and Figure 8.

Figure 7. Female Students Make a Project on the Impact of Nationalism on the Indonesian Nation;

Figure 8. Boys Students Create a Project on the Influence of the Presidential Election on Indonesian Society

Through this approach, the SMAMX festival is not only a place to show creativity but also creates a more inclusive learning process and touches on various learning styles of students, which are in accordance with the principles of differentiated learning that encourage active participation of all students. So that the approach used by Pancasila Education teachers at SMA Muhammadiyah 10 Surabaya reflects the principle of differentiated learning put forward by Tomlinson. This principle emphasizes the importance of designing learning content, processes, and products to meet the diverse needs of students (Trisnani et al., 2024). By utilizing a variety of media such as videos, presentations, and practical projects, teachers not only accommodate different learning styles, but also provide opportunities for students to learn in the way that best suits their preferences. This also shows the importance of variety in the delivery of material so that learning reaches all students without leaving anyone behind.

The application of technology and multimedia at SMA Muhammadiyah 10 Surabaya has been well integrated and has succeeded in creating a more dynamic and flexible learning experience. Learning tailored to the learning styles of auditory, visual, kinesthetic students makes the material easier to understand and provides opportunities for each student to learn in the way that works best for them. Teachers have also been able to develop a learning process that refers to the independent curriculum policy and the laws and regulations of the Ministry of Education and Culture to create more innovative and technology-based learning, not only improving the quality of the learning process, but also optimizing the overall student learning experience.

b. Students' Perception of the Use of Multimedia in Differentiated Learning of Pancasila Education SMA Muhammadiyah 10 Surabaya

In the context of learning Pancasila Education at SMA Muhammadiyah 10 Surabaya, students' perception of the use of multimedia in differentiated learning shows a very positive trend, especially in realizing student involvement and understanding the learning process. Here students named (H.A.S.) and (K.N.P.), two students from class X 1 (Girls), explained that they felt more interested and active when learning using pictures, videos, animations, and presentations digitally. (H.A.S.) who revealed that *"I like this lesson because there are historical videos or animated images that illustrate the values of Pancasila, it becomes easier for me to understand the material delivered by the teacher"* This is because the material is not only explained through words such as lectures or ordinary presentations, but also through visual images that make it easier to understand abstract concepts. In this case, Mayer's theory of multimedia learning is very relevant. Mayer emphasized the importance of integrating images and text in learning materials, allowing students to connect verbal information with visual representations, so that later they can enrich their cognitive processes. This is in line with the learning experience (H.A.S.) which makes it easier to understand the material through image visualization, which will clarify the information conveyed by the teacher.

For (K.N.P.), who prefers auditory learning styles, also feels great benefits from the use of multimedia in learning. He stated that *"I feel more interested and active when there is an explanation accompanied by sound, such as a video accompanied by a narrative explanation, which makes it easier to remember and understand the material"* This indicates that the auditory learning style in which students prefer to learn by listening which benefits greatly from the use of video, audio-based presentations or lectures, and oral explanations combined with visual elements. This also strengthens Gardner's theory of multiple intelligences (Indria, 2020), which states that everyone has a different learning style, and effective learning should include a variety of modalities that can adapt to different learning styles of students, such as visual and auditory.

The statements from the two students of class X 1 (Girls), which are still in line with the interviews from class XII IIS 2 (Girls) are (B.U.A.) and (N.H.) explaining how multimedia in learning Pancasila Education can meet the more dominant visual and auditory learning styles in girls class students. (B.U.A.) who argued *"I prefer images and videos; I feel that the material that was previously difficult to understand becomes clearer and more concrete thanks to the presence of multimedia such as when the teacher explains with PowerPoint in it.".* The same thing was also conveyed by Najwa, "*Although I feel that I am a person who likes to learn by listening or I am called an auditory child, but I feel that videos and pictures are very helpful in understanding difficult material and make learning more interactive and fun compared to conventional lectures without multimedia support, sometimes if you just listen to it, you get bored and sleepy quickly."* The results of the interview showed that these two students also felt that multimedia learning supported by a differentiated approach helped them in understanding the material from the teacher. (B.U.A.) and (N.H.) explaining different tasks and learning, such as practical learning and the use of images and videos, facilitating their understanding of Pancasila material in depth and meaning.

Moving on to classes XI SEB 2 (Boys), (R.J.N.) and (R.I.A) showed that the dominant kinesthetic learning style in their classes made them more interested in practical and hands-on experience-based activities. (R.J.N.) who said that *"I prefer the project because I can interact directly with the material, for example through the creation of real products in the form of posters or 3D mading, which gives him the opportunity to delve deeper into the material and feel it in a more real form."* Plus (R.I.A.) also revealed that "I feel more like doing activities in learning such as making products but also like visual things such as videos". This shows that students who are more dominant with a kinesthetic learning style who prefer to practice and learn while moving will be more motivated and involved in the learning process that facilitates practical activities, projects, group discussions rather than learning that only relies on lecture and static presentation methods. This is in line with the theory of constructivism from Piaget and Vygotsky (Bustomi et al., 2024), Emphasizing hands-on experience and social interaction is key in effective learning, especially for students with kinesthetic learning styles.

In addition, the differentiated learning theory popularized by Carol Ann Tomlinson is particularly relevant in this context. Differentiated learning recognizes that each student has different needs in terms of learning styles and interests, so teaching must also be tailored to individual needs (Tomlinson, 2014). Students with visual and auditory learning styles, such as those found in students in grades X 1 (Girls) and XII IIS 2 (Girls), who need more visual and audio media to support their learning process. On the other hand, students with a kinesthetic learning style, such as in grade XI SEB 2 (Boys), will be more effective if their learning includes practical activities and hands-on experience.

In other words, a differentiation approach that accommodates the needs of visual, auditory, and kinesthetic learning styles not only increases students' involvement in the learning process in the classroom but also optimizes their understanding of the material being studied. The multimedia learning process with a differentiated approach makes students more motivated because they are given the opportunity to choose a learning model according to their preferences, not just passive recipients of information. In this case, the active learning theory developed by Bonwell and Eison is very relevant. Active learning emphasizes the importance of direct student involvement in learning, which can be achieved through various methods such as group discussions, simulations, quizzes that effectively increase student learning motivation (Choiri et al., 2025).

This is also supported by the theory of developmental psychology, especially in terms of gender differences, it can be explained that the learning style between female and male students reflects a tendency influenced by social and cultural factors. According to the Differential Expectation Theory, the differences in behavior and preferences of men and women are greatly influenced by the social expectations that develop in society (Maccoby & Jacklin, 1987). In this context, female students tend to favor auditory and visual learning styles, in line with learning that involves listening and seeing, activities that tend to be calmer and more reflective.

On the other hand, the theory of Evolutionary Psychology explains that male students, who are more active and exploratory, tend to be more interested in kinesthetic learning styles, which allow them to engage in hands-on experiences and physical activities, a tendency that may stem from their traditional role in hunting and exploring (Hastjarjo, 2003; Jaarvis, 2021). Understanding these gender differences is very important in designing learning strategies that suit the individual needs of students, and with differentiated multimedia, schools can facilitate each student's learning style more optimally.

So that the use of multimedia in learning Pancasila Education at SMA Muhammadiyah 10 Surabaya has shown positive results, with students feeling more engaged, motivated, and better understanding of learning materials. The use of visual, audio, and interactive media in learning that is tailored to individual learning styles has proven to be effective in improving the quality of learning and student engagement. However, to be able to optimize the learning process further, there needs to be maximization in technological infrastructure in schools, as well

as an increase in media diversity to accommodate and reach various learning styles (Suhartawan et al., 2024). Thus, effective and achievable multimedia-based learning, which will facilitate the achievement of educational goals.

c. Inhibiting and Supporting Factors Encountered by Students in the Use of Multimedia in Learning Pancasila Education at SMA Muhammadiyah 10 Surabaya

Learning with multimedia in a differentiated manner at SMA Muhammadiyah 10 Surabaya, especially the subject of Pancasila Education, has shown various benefits and challenges. Based on the results of interviews with students, there are several inhibiting and supporting factors that can affect the use of multimedia in learning. The main supporting factor is the application of multimedia that can accommodate various learning styles of students, such as visual, auditory, and kinesthetic learning styles.

Grade XII IIS 2 (Girls) students, as conveyed by (H.A.S.) that they feel more interested and active when using multimedia in learning. According to him, the presence of videos and images in the presentation makes the material more interesting and easier to understand, especially for abstract concepts such as Pancasila values. The use of multimedia in learning is very effective in increasing student engagement. As explained in the study (Agustiana et al., 2023), that the implementation of differentiated learning that is implemented in line with the independent curriculum can increase student learning motivation.

However, even though the use of multimedia provides many advantages, students still face several technical obstacles that affect smooth learning. (K.N.P.), who has an auditory learning style, who revealed *"I really like learning with technology because I am also used to it, but what bothers me a little is that I need an internet connection when accessing online assignments/quizzes and usually the projector is often dimmed or not connected"* This is related to the challenges that students encounter when using multimedia devices based on digital technology, one of which is an internet connection that unstable and sometimes problematic projectors.

This condition makes access to learning materials, such as PowerPoint presentations and online quizzes in the classroom, disrupted, leading to a decrease in the quality of learning that relies on technology. The same thing was also conveyed by (R.J.N.), who also revealed the multimedia problems in his class *greeting "I usually find obstacles such as HDMI cable problems between projectors and PCs that are disconnected, sometimes suddenly when they have been connected for a long time and then disconnected again"* This is in the form of interference from devices that are not optimal, such as problems with HDMI cables and projectors that often have problems Previous research by (Rehi et al., 2021) It also identifies the lack of supporting facilities that greatly affect the success of the application of multimedia in learning, requiring more attention to the availability and maintenance of the devices used in multimedia studies. So, it

is necessary to optimize multimedia devices periodically to avoid problems in learning.

Pancasila Education Teachers at SMA Muhammadiyah 10 Surabaya also face similar challenges in terms of limited devices. The teacher (A.J.A.), who acknowledged that although projectors are often used to display materials, some technical issues such as loose power plugs and limited internet bandwidth often hinder the smooth running of teaching. As a solution, he tried to minimize this obstacle by using personal tethering or making sure the device was in good condition before use.

In addition, the teacher (I.D.L.) explained that although projectors are not available in all classes, the use of students' personal devices such as cellphones to access materials can also be an alternative that helps ensure a smooth learning process. This is in line with the findings of (Rehi et al., 2021) which shows that despite technical constraints, the implementation of multimedia can be successful with adequate technological support and teaching creativity that utilizes available devices. So that if teachers and students support each other and are creative, the obstacles obtained can be well controlled.

One of the significant supporting factors is the diversity of students' learning styles that can be accommodated well using multimedia. As explained by (B.U.A.), students with visual learning styles find it very helpful to have images and videos presented in PowerPoint presentations. However, other inhibiting factors also appear in the form of external distractions, such as students' lack of focus when using technology. (R.I.A.) mentions *that "I think multimedia makes learning easier, but I also become often distracted when using the internet, for example when looking for material on YouTube, I am sometimes tempted to watch videos that are not related to the lesson"* To overcome this, teachers try to direct students to stay focused by using interactive platforms such as Quizizz that make learning activities fun and increase engagement student. Thus, despite some challenges, the use of multimedia in learning can have a significant positive impact on the quality of learning if it is balanced with improved infrastructure and good classroom management. The same approach was invented by (Rehi et al., 2021) emphasizing the importance of good classroom management to maximize its optimization.

Those multimedia facilities such as projectors, PCs, Wi-Fi, and power plugs are quite adequate, although they are not yet fully available. An interview with the principal represented by the vice principal for curriculum (A.N.S.W.) who explained that *"This school continues to strive to improve other facilities and supporting devices to ensure that multimedia-based learning runs more optimally. The school has also organized training for teachers."* The evaluation is carried out through classroom observation and feedback from students, to ensure that learning continues to run effectively and according to the needs of the times and collaborates through the foundation's teacher group and MGMP. With the support of facilities and training, it is strengthened for teachers to support learning (Amelia, 2023).

4. Conclusion

The integration of multimedia in differentiated learning of Pancasila Education at SMA Muhammadiyah 10 Surabaya has provided positive results, by creating a dynamic and enjoyable learning experience for students. The use of various types of media such as images, videos, and interactive platforms can accommodate various student learning styles, both visual, auditory, and kinesthetic. With this approach, students are actively involved in the learning process and can understand the material in a way that suits their preferences. This is in line with the principle of differentiated learning from Tomlinson and the multimedia learning theory from Mayer. However, technical challenges such as unstable internet connections, device issues such as projectors and problematic cables, as well as external distractions such as student inattention, hinder learning effectiveness. So that to optimize the use of multimedia in learning, it is necessary to improve technological infrastructure in schools, including periodic maintenance of devices and improvement of the quality of internet connections. In addition, it is necessary to conduct training for teachers to maximize the use of technology in developing a more interactive and innovative learning process. The suggestion for schools is to continue to improve multimedia facilities to support the sustainability of technology-based learning. With these efforts, it is hoped that this learning can run more effectively, inclusively, and facilitate maximum student learning styles.

References

Agustiana, D. M., Malik, M., Rumiati, S., & Pardede, S. (2023). Analisis Pembelajaran Berdiferensiasi Pendidikan Pancasila dan Kewarganegaraan Dalam Kurikulum Merdeka. *Jurnal Citizenship Virtues*, *3*(2), 522–533. https://doi.org/10.37640/JCV.V3I2.1869

Ali, A., Maniboey, L. C., Megawati, R., Djarwo, C. F., & Listiani, H. (2024). *Media Pembelajaran Interaktif : Teori Komprehensif dan Pengembangan Media Pembelajaran Interaktif di Sekolah Dasar*. PT. Sonpedia Publishing Indonesia.

Amelia, U. (2023). Tantangan Pembelajaran Era Society 5.0 dalam Perspektif Manajemen Pendidikan. *Al-Marsus : Jurnal Manajemen Pendidikan Islam*, *1*(1), 68. https://doi.org/10.30983/al-marsus.v1i1.6415

Apriza, A., Kurniawan, & Bahri, S. (2023). *Menciptakan Konsentrasi Belajar Melalui Media Gambar Pada Pembelajaran pendidikan kewarganegaraan di kelas 1 MIS GUPPI 11 Talang Rimbo Baru* [Skripsi]. Institut Agama Islam Negeri Curup.

Barus, A. M., Sari, W. W., Stephanie, L., & Rahayu, I. P. (2022). *Panduan dan Praktik Baik Project-Based Learning: Menginspirasi, Mencipta, dan Mendedikasikan Karya*. PT Kanisius.

Bustomi, Sukardi, I., & Astuti, M. (2024). Pemikiran Konstruktivisme Dalam Teori Pendidikan Kognitif Jean Piaget dan Lev Vygotsky. *Jurnal Review Pendidikan Dan Pengajaran (JRPP)*, *7*(4). https://doi.org/https://doi.org/10.31004/jrpp.v7i4.37551

Choiri, M. F., Neviyarni, & Nirwana, H. (2025). Optimalisasi Active Learning Sebagai Strategi Meningkatkan Motivasi Dan Hasil Belajar di Era Industri 4.0. *Jurnal Pendidikan Sosial Dan Konseling (JPDSK)*, *2*(4). https://jurnal.ittc.web.id/index.php/jpdsk/article/view/2116

Dananjaya, U. (2023). *Media Pembelajaran Aktif*. Nuansa Cendekia.

Dapodik. (2025). *SMA muhammadiyah 10*. Data Pokok Pendidikan (DAPODIK); Direktorat Jenderal Pendidikan Anak Usia Dini, Pendidikan Dasar Dan Pendidikan Menengah; Kementerian Pendidikan Dasar Dan Menengah. https://dapo.dikdasmen.go.id/sekolah/664169092D20AE69E624

Firmansyah, H. (2024). Penggunaan Media Pembelajaran Digital untuk Meningkatkan Minat Belajar Sejarah di Sekolah Menengah Atas. *JIM: Jurnal Ilmiah Mahasiswa Pendidikan Sejarah*, *9*(2), 541–548. https://doi.org/10.24815/JIMPS.V9I2.30416

Golzar, J., Noor, S., & Tajik, O. (2022). Convenience Sampling. *International Journal of Education & Language Studies*, *1*(2), 72–77. https://doi.org/10.22034/IJELS.2022.162981

Gustifal, R., Septina, W. W., Adrias, & Alwi, N. A. (2024). Tantangan dan Strategi Implementasi Mata Pelajaran PPKn di Era Digital. *Jurnal Pendidikan, Bahasa Dan Budaya*, *3*(3), 91–100. https://doi.org/10.55606/JPBB.V3I3.3849

Halimah, N., Hadiyanto, & Rusdinal. (2023). Analisis Pembelajaran Berdiferensiasi sebagai Bentuk Implementasi Kebijakan Kurikulum Merdeka. *Pendas : Jurnal Ilmiah Pendidikan Dasar*, *8*(1), 5019–5019. https://doi.org/10.23969/JP.V8I1.7552

Hastjarjo, D. (2003). Mengenal Sepintas Psikologi Evolusioner. *Buletin Psikologi*, *11*(2). https://doi.org/https://doi.org/10.22146/bpsi.7462

Husnullail, M., Risnita, Jailani, M. S., & Asbui. (2024). Teknik Pemeriksaan Keabsahan Data dalam Riset Ilmiah. *Jurnal Genta Mulia*, *15*(2), 70–78. https://ejournal.uncm.ac.id/index.php/gm/article/view/1148

Ibda, H. (2002). *Belajar dan Pembelajaran Sekolah Dasar: Fenomena, Teori, dan Implementasi*. CV. Pilar Nusantara.

Indria, A. (2020). Multiple Intelligence. *Jurnal Kajian dan Pengembangan Umat*, *3*(1). https://doi.org/https://doi.org/10.31869/jkpu.v3i1.1968

Jaarvis, M. (2021). *Psikologi Biologi Neurofisiologi: Seri Teori Psikologi*. Nusamedia.

Krajcik, J., Blumenfeld, P. C., Marx, R. W., Bass, K. M., Fredricks, J., & Soloway, E. (1998). Inquiry in Project-Based Science Classrooms: Initial Attempts by Middle School Students. In *Learning Through Problem Solving* (1st ed.). Psychology Press.

Kusnadi, E., & Azzahra, S. A. (2024). Penggunaan Media Pembelajaran Interaktif Berbasis Wordwall dalam Meningkatkan Motivasi Belajar Peserta Didik Pada Mata Pelajaran PPKn di MA Al Ikhlash Padakembang Tasikmalaya. *Jurnal Dimensi Pendidikan Dan Pembelajaran*, *12*(2), 323–339. https://doi.org/10.24269/DPP.V12I2.9526

Livia, D. (2024). Penggunaan Media Audio Visual Untuk Meningkatkan Motivasi Siswa Pada Pembelajaran PAI di SMK Negeri 2 Painan. *Jurnal Pendidikan Tuntas*, *2*(4), 787–792. https://publikasi.abidan.org/index.php/jpt/article/view/967

Maccoby, E. E., & Jacklin, C. N. (1987). *Gender Segregation in Childhood* (pp. 239–287). https://doi.org/10.1016/S0065-2407(08)60404-8

Magfiroh, N., Herlambang, A. D., & Zulvarina, P. (2025). Pembentukan Kemampuan Abstraksi Siswa dalam Mata Pelajaran Pemrograman Web Melalui Penguatan Pengalaman Pemecahan Masalah. *Jurnal Pengembangan Teknologi Informasi Dan Ilmu Komputer*, *9*(3), 2548–2964. https://j-ptiik.ub.ac.id/index.php/j-ptiik/article/view/14627

Mayer, R. E. (2002). Multimedia learning. *Psychology of Learning and Motivation - Advances in Research and Theory*, *41*, 85–139. https://doi.org/10.1016/S0079-7421(02)80005-6

Media Ekspresi Siswa SMAMX Surabaya Gelar Festival Tengah Semester. (2022). Dinas Komunikasi dan Informatika Provinsi Jawa Timur.

Nofmiyati, Miftahuddin, & Zatrahadi, M. F. (2023). Analisis Partisipasi Siswa dalam Pembelajaran Agama Islam: Analisis Studi Literatur. *Jurnal Administrasi Pendidikan Dan Konseling Pendidikan*, *4*(1), 7–18. https://doi.org/10.24014/JAPKP.V4I1.24983

Nurhidayah, A. E. (2023). Pemberdayaan Guru Madrasah Melalui Pelatihan Metode Pembelajaran Kreatif Berbasis Digital di SMA Muhammadiyah Bayuresmi Garut. *Jurnal Peradaban Masyarakat*, *3*(6), 238–249. https://doi.org/10.55182/JPM.V3I6.523

Peraturan Menteri Pendidikan, Kebudayaan, Riset, Dan Teknologi Nomor 16 Tahun 2022 Tentang Standar Proses Pada Pendidikan Anak Usia Dini, Jenjang Pendidikan Dasar, Dan Jenjang Pendidikan Menengah, Database Peraturan BPK (2022). https://peraturan.bpk.go.id/Details/224238/permendikbudriset-no-16-tahun-2022

Pertiwi, A. D., Nurfatimah, S. A., Dewi, D. A., & Furnamasari, Y. F. (2021). Implementasi Nilai Pendidikan Karakter Dalam Mata Pelajaran PKn di Sekolah Dasar. *Jurnal Basicedu*, *5*(5), 4328–4333. https://doi.org/10.31004/Basicedu.V5I5.1565

Purnawanto, A. T. (2023). Pembelajaran Berdiferensiasi. *Jurnal Pedagogy*, *16*(1), 34–54. https://jurnal.staimuhblora.ac.id/index.php/pedagogy/article/view/152

Ramadhan, W., Meisya, R., Jannah, R., & Putro, K. Z. (2023). E-modul Pendidikan Pancasila Berbasis Canva Berbantuan Flip PDF Profesional untuk Meningkatkan Hasil Belajar Siswa Sekolah Dasar. *Jurnal Pemikiran Dan Pengembangan Sekolah Dasar (JP2SD)*, *11*(2), 178–195. https://doi.org/10.22219/JP2SD.V11I2.27262

Rehi, F. D., Chotimah, N., & Kpalet, P. (2021). Penerapan Multimedia dalam Pembelajaran PPKn. *EduTech: Jurnal Ilmu Pendidikan Dan Ilmu Sosial*, *7*(1), 1–5. https://doi.org/10.30596/EDUTECH.V7I1.4821

Ridlo, U. (2023). *Metode Penelitian Studi Kasus: Teori dan Praktik*. Publica Indonesia Utama.

Rusman. (2017). *Belajar & Pembelajaran: Berorientasi Standar Proses Pendidikan*. Prenada Media.

Sari, E. R., Yusnan, M., & Matje, I. (2022). Peran Guru Dalam Meningkatkan Keaktifan Belajar Siswa Melalui Media Pembelajaran. *Jurnal Eduscience*, *9*(2), 583–591. https://doi.org/10.36987/JES.V9I2.3042

Startyaningsih, T., Handayani, A., & Rahmawati, D. (2024). Analisis Penerapan Pembelajaran Berdiferensiasi untuk Meningkatkan Hasil Belajar Siswa Dalam Pendidikan Pancasila di Sekolah Dasar. *Jurnal Kajian Pendidikan*, *6*(3). https://journalpedia.com/1/index.php/jkp/article/view/3189

Stratton, S. J. (2021). Population Research: Convenience Sampling Strategies. *Prehospital and Disaster Medicine*, *36*(4), 373–374. https://doi.org/10.1017/S1049023X21000649

Sugiyono. (2021). *Metode penelitian kuantitatif, kualitatif, dan R&D* (3rd ed.). Alfabeta.

Suhartawan, B., Daawia, Prastawa, S., Reba, Y. A., Abdullah, G., Arifin, Sirjon, Purnama, Z. R., & Veronika, P. (2024). *KONSEP DASAR MEDIA PEMBELAJARAN*. CV Rey Media Grafika.

Sundari, E. (2024). Transformasi Pembelajaran di Era Digital: Mengintegrasikan Teknologi Dalam Pendidikan Modern. *Sindoro: Cendikia Pendidikan*, *4*(5), 25–35. https://doi.org/10.9644/SINDORO.V4I5.3325

Tomlinson, C. A. (2014). *The Differentiated Classroom: Responding to the Needs of All Learners* (2nd ed.). Association for Supervision and Curriculum Development.

Trisnani, N., Efendi, Zuriah, N., Kobi, W., Kaharuddin, A., Subakti, H., Utami, A., Anggraini, V., Farhana, H., Pitriyana, S., Watunglawar, B., Mutaqin, A., Farid, M. G., Juwita, A. R., Dianita, E. R., Tulak, T., & Yunefri, Y. (2024). *Pembelajaran Berdiferensiasi dalam Kurikulum Merdeka*. PT. Mifandi Mandiri Digital.

Wibowo, H. S. (2023). *Pengembangan Teknologi Media Pembelajaran : Merancang Pengalaman Pembelajaran yang Inovatif dan Efektif*. Tiram Media.

Zaenab. (2024). *Penguatan Tpack bagi Guru Smk*. Penerbit Kbm Indonesia.

Zakaria, Sukomardojo, T., Sugiyem, Razali, G., & Iskandar. (2023). Menyiapkan Siswa untuk Karier Masa Depan Melalui Pendidikan Berbasis Teknologi : Meninjau Peran Penting Kecerdasan Buatan. *Journal on Education*, *5*(4), 14141–14155. https://jonedu.org/index.php/joe/article/view/2436

How to cite this article:

Widyatama, P. R., Muhajir., & Huda, N. (2025). Students' Views on Multimedia in Differentiated Learning of Pancasila Education at SMA Muhammadiyah 10 Surabaya. *Journal of Educational Sciences*, *9(2)*, 782-801.