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## **Blended Learning: How Can Multimedia Enhance Students' Characters?**

### **Abstract**

The purpose of this study is to describe the use of multimedia in strengthening students' characters. This study employed a survey method with a cross-sectional type. The sample that included 265 students from Universitas Negeri Padang, Universitas Sebelas Maret, and Universitas Pendidikan Indonesia was determined proportionally. The data were collected through questionnaires, interviews, FGDs and self-evaluation, using quantitative descriptive analysis. The results of this study include 1) Students have gained experience in the learning process with a variety of interesting media in the form of text, images, graphics, sound, videos, animation, and others; 2) the multimedia used in this study includes motivational videos and texts that contain values in developing students' character; 3) the dominant characters developed in multimedia blended learning are critical thinking, disciplined, creative, and collaborative. This multimedia blended learning has led to the strengthening of students' characters. Therefore, character strengthening needs to be optimized in multimedia blended learning.

**Keywords:** *multimedia, blended learning, students' characters, Pancasila and civic education*

## **Introduction**

Information and communication technologies have altered the way individuals learn and how learning is done (Collins & Halverson, 2018). The COVID-19 pandemic has caused a tremendous increase in the usage of technology in education (Dhawan, 2020). After COVID-19, blended learning is still expanding and evolving. Blended learning is considered the most effective teaching style and is widely used by educational institutions because it is effective, flexible, timely, and sustainable (Rasheed et al., 2020). The use of blended learning also has a positive and satisfying impact because it simplifies the process for students to receive a variety of experiences (Kang & Park, 2022). Blended learning also shows a better and more consistent effect than traditional learning (Vallée et al., 2020).

There are three components taught in character education: *moral knowing, moral feeling, and moral action*. All of the components are taught in blended-based learning. In order to be received by students easily, character education must be able to present meaningful values that students can understand. The use of interactive media, such as motivational videos and pictures, plays a role in character building in the aspects of moral feeling, moral knowing, and moral action (Komalasari & Rahmat, 2019). The use of interactive multimedia variations in blended learning has been used in Chemistry subjects (Lo & Tang, 2018), in Biology learning to develop scientific attitudes (Movahedzadeh, 2011), to improve listening and speaking skills (Riza et al., 2021), and the use of interactive multimedia games on AIDS prevention (Illera, 2008). However, there is room for improvement in the use of interactive multimedia in blended learning that incorporates character education. For this reason, technological advances and information in learning are expected to support the emergence of multimedia innovations in character education learning. Character education is an effort to build awareness, care, and respect for fundamental ethical principles, including responsibility, honesty, and fairness (Gray, 2009). The underlying principle of character education is that it is important to teach students how to develop into morally upright individuals (Revell & Arthur, 2007).

Research on the application of multimedia in character education learning is necessary to reveal types and components of multimedia that contain character values in blended learning practices and character values dominant in blended learning. Because the PCESP focuses on nation-building and character development, this study aims to reveal how multimedia is used in blended learning to strengthen students' characters.

## **Research Problem**

This study uses multimedia in blended learning to strengthen students' characters in the Pancasila and Civic Education Study Program (PCESP). The problems of the study are formulated specifically as follows:

1. What types of multimedia are used in blended learning to strengthen students' characters in the PCESP at Universitas Negeri Padang (UNP) Padang, Universitas Pendidikan Indonesia (UPI) Bandung, and Universitas Sebelas Maret (UNS) Solo?
2. What are the dominant characteristics of multimedia blended learning in the PCESP at UNP Padang, UPI Bandung, and UNS Solo?
3. How is multimedia used in blended learning for developing students' characters in the PCESP at UNP Padang, UPI Bandung, and UNS Solo?

## **Research Methodology**

### **General Background of Research**

The research design is a survey because it is a quantitative study to describe attitudes, opinions, behaviours, or population characteristics by surveying a sample of participants or the entire community (Creswell & Creswell, 2017). The study employed a single variable description because the data collected reflected the results of the total distributed sample, which included many alternative responses in a single questionnaire.

### **Research Sample**

Research respondents are students of the 2020 and 2021 batches who use blended learning in two semesters in the year 2021/2022. The students are from the PCESP Programs at UNP Padang, UPI Bandung, and UNS Solo. By using the small sample technique, the sample used was 265 people from 817 populations. The questionnaire was distributed by using a google form to respondents. Population distribution and student samples are as follows.

**Table 1.** Population distribution and research samples

No.	University Names	Population (students)	Sample (students)
1.	Universitas Pendidikan Indonesia	278	80
2.	Universitas Negeri Sebelas Maret	272	65
3.	Universitas Negeri Padang	267	120
	Total	817	265

### Instrument and Procedures

The data were collected through questionnaires, self-evaluations, interviews, and Focus Groups Discussions (Gay, 1991). Due to the limited access during the COVID-19 Pandemic, questionnaires and self-evaluations were distributed and collected via Google Forms and email. Self-evaluation is used in blended learning to identify students' characters developed in blended learning. The instruments are shown below.

**Table 2.** The research instrument

Variable	Indicator
Learning Multimedia	1. The understanding of Multimedia concepts
	2. The facts of using multimedia in blended learning
	3. Multimedia creation in blended learning
	4. Multimedia presentation in blended learning
	5. Integration of character strengthening in multimedia blended learning
	6. Character strengthening strategies in learning multimedia
Students' characters	1. Religious
	2. Disciplined
	3. Honest
	4. Independent
	5. Hard-working
	6. Critical thinking
	7. Emphatic
	8. Responsible
	9. Innovative
	10. Collaborative
	11. Democratic

Variable	Indicator
Students' characters	12. Nationalist
	13. Tolerant
	14. Peaceful
	15. Digital literacy

## Data Analysis

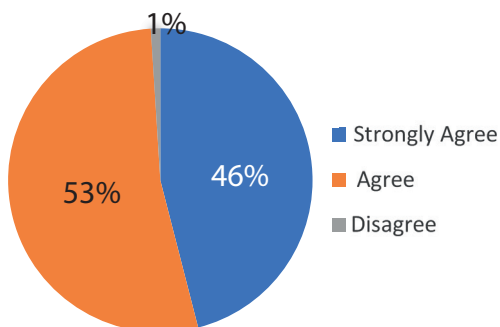
Quantitative descriptive analysis shows the frequency of respondents' answers through percentages and reveals phenomena in the research site. Steps in the percentage technique include a) Checking the completion of the respondents' answers; b) Classifying the data based on the specified criteria; c) Tabulating the data based on the classification made; d) Calculating the frequency of answers/data; e) Calculating the percentage using the percentage technique of each data; f) Visualizing the data in tables; g) Interpreting the data according to the research questions.

## Research Results

### The Use of Multimedia in Blended Learning for Character Strengthening

#### 1. The Understanding of Multimedia Concepts

Learning multimedia refers to the combination and synergy of various media (text, images, graphics, sound, videos, animation, etc.). It should be used in blended learning of the PCESP. The description of the students' understanding of multimedia in blended learning is shown in Figure 2.

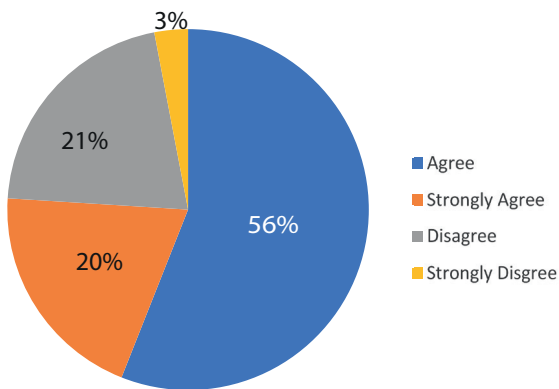


**Figure 1.**  
Students' understanding of  
Multimedia Blended Learning

Figure 2 shows the students' understanding of the concept of learning multimedia. Learning multimedia refers to the combination and synergy of various media (text, images, graphics, sound, video, animation, etc.). More than half of the students (53%) strongly agree, 46% agree, and only a few (1%) disagree that multimedia should be used in blended learning of the PCESP.

## 2. The Use of Multimedia

The following figure shows students' responses to the use of multimedia in blended learning that is interesting, meaningful, and relevant to the learning materials.



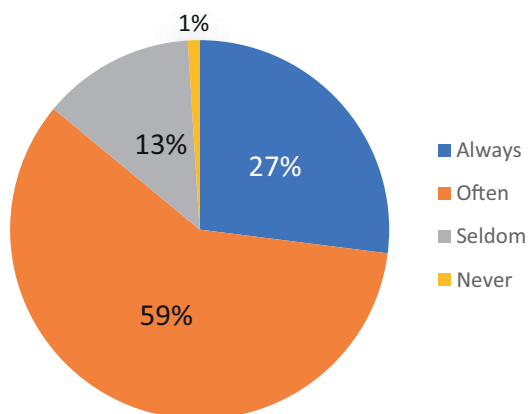
**Figure 2.** The use of Multimedia in blended learning

Figure 3 shows that more than half of the students (56%) agreed that lecturers use learning multimedia that is interesting, meaningful, and relevant to the learning materials in blended learning. Moreover, 20% of the students strongly agreed, and 21% disagreed. It shows that many lecturers still do not use variations of learning multimedia.

## 3. Students' Creativity in Making Multimedia

The creativity of students in making multimedia according to the learning materials in blended learning is presented in the following figure.

Learning multimedia is not only offered by lecturers to foster students' creativity, but students can also creatively design learning multimedia to present relevant materials in blended learning. Figure 4 shows that more than half of students often create learning multimedia, 27% of them always create it, and 13% of them rarely do so.

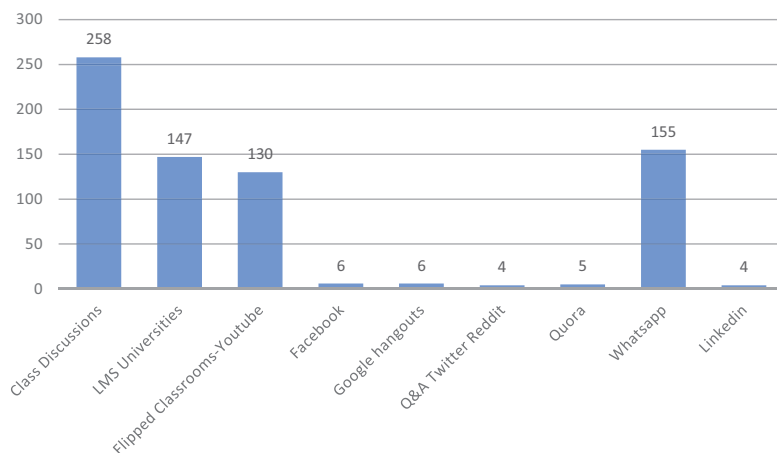


**Figure 3.** Students' creativity in multimedia blended learning

#### 4. The Presentation of Learning Multimedia in Blended Learning

Most of the students share learning multimedia made in blended learning with the audience through platforms which can be seen in the following figure.

Multimedia created by students was presented on several platforms. During presentations and in-class discussions, 258 of the 265 students used multimedia.

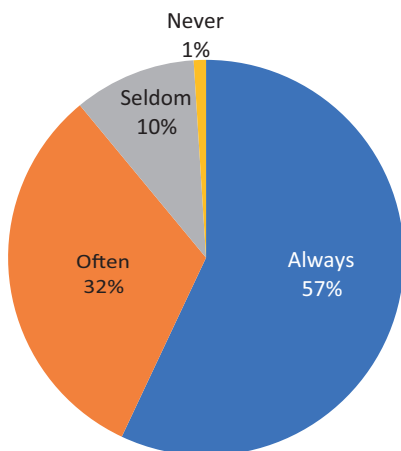


**Figure 4.** Variations in the use of multimedia in blended learning

Moreover, 147 students presented multimedia in Learning Management System (LMS) and The Flipped Classroom – YouTube; and 155 students in WhatsApp. In addition, there were only under 10 students who presented on Facebook, Google Hangouts, Q&A – Twitter/Reddit, Quora, and LinkedIn. At UNS Solo, there was no student who used and presented the multimedia.

### 5. *The Integration of Character Strengthening in Multimedia Blended Learning*

Learning multimedia in blended learning includes materials related to characters (attitude) that are important, in addition to knowledge and skills. Students' responses to the integration of character strengthening in blended learning multimedia are described as follows.



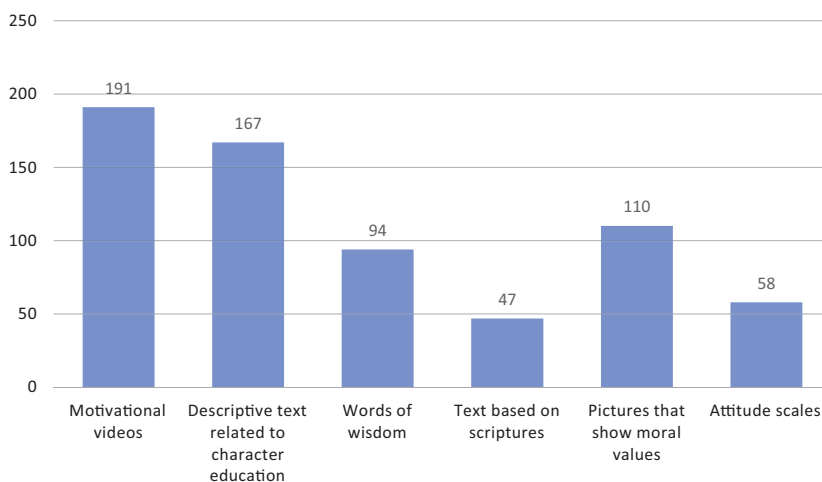
**Figure 5.** The inclusion of character education in multimedia blended learning

More than half of the students (57%) stated that learning activities in the PCESP always include materials related to characters (attitude) in blended learning that uses learning multimedia. In the same vein, 32% of the students stated that learning multimedia often includes character education. However, 10% of students stated that learning multimedia rarely includes characters. Based on the data above, it can be concluded that implementing blended learning at UNP, UPI and UNS, has included character education in the learning multimedia.

### 6. *The Strategies for Strengthening Characters in Multimedia Blended Learning*

The dominant character-strengthening strategies are implemented in blended learning according to student responses, as can be seen in the following figure.





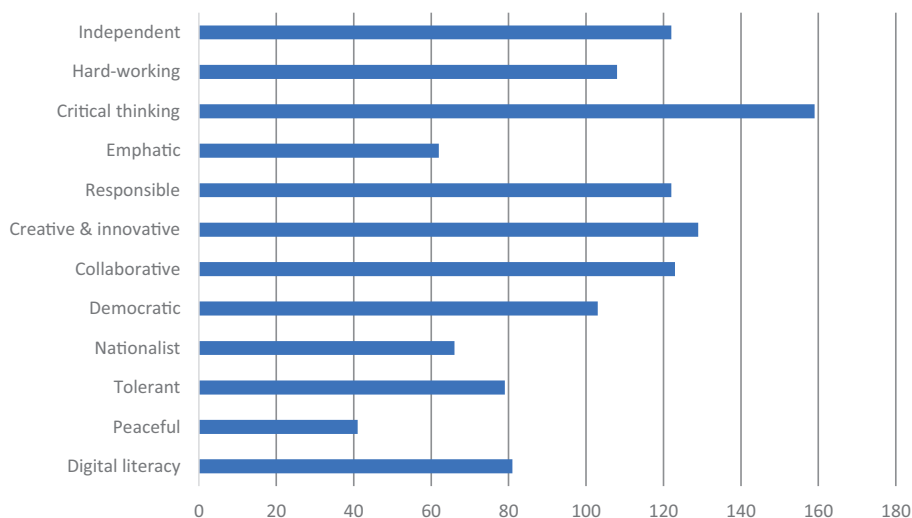
**Figure 6.** Strategies for strengthening characters in multimedia blended learning

Using motivational videos to strengthen students' characters is dominant in blended learning (191 students). Additionally, the multimedia used is descriptive text related to character education (167 students), words of wisdom (94 students), pictures that show moral values (110 students), attitude scales (58 students), and text based on scriptures (47 students). The use of multimedia blended learning has been implemented in various ways.

### Characters Developed in Multimedia Blended Learning

The dominant characters developed in multimedia blended learning at the PCESP during the second semester of 2021/2022 are shown in Figure 7.

The dominant characters developed in multimedia blended learning during the second semester of 2021/2022 PCESP sequentially included: Critical thinking, creative and innovative, collaborative, responsible, hard-working, and democratic. Characters that were rarely developed through multimedia in blended learning were peaceful, empathic, and nationalist. Students stated that the most dominant characters were critical and innovative thinking.



**Figure 7.** Character strengthening blended learning

## Multimedia Blended Learning Design

The results of interviews with UNP, UPI, and UNS lecturers related to multimedia blended learning, are described in Table 3.

**Table 3.** The interview results

No.	Aspects	Feedback
1.	Multi-media Blended Learning	<ol style="list-style-type: none"> <li>1. The use of sound cloud-based multimedia such as podcasts that can be accessed via Spotify, Joox, Apple Music, Apple Podcasts, etc.</li> <li>2. The use of learning explainer videos accessed on the YouTube page</li> <li>3. Interactive PowerPoint</li> <li>4. Mind maps that can be accessed through LMS</li> </ol>
2.	Character integration in multimedia	<ol style="list-style-type: none"> <li>1. The use of interactive multimedia that is meaningful and can promote students' interaction</li> <li>2. Multimedia should motivate the students to strengthen students' characters</li> <li>3. Deadlines on assignments encourage discipline in students.</li> <li>4. The use of videos and movie clips that contain character values so that the students can respond to them.</li> </ol>

## **Discussion**

The results of the study revealed three main findings. First, students have gained experience learning with various interesting multimedia. The multimedia includes text, images, graphics, sound, and videos. Multimedia that is varied and interactive increases students' interest in learning significantly. Multimedia can be described as simultaneously presenting verbal information and images so that all five senses are involved (Richter et al., 2016). Multimedia simplifies complex knowledge because of the key elements presented (Çeken & Taşkın, 2022). In addition, multimedia, such as interactive games, make students have fun learning experiences (Illera, 2008; Rejekiningsih et al., 2022). Appropriate learning methods must also support the use of interactive multimedia. Studies show that using interactive media supported by cooperative learning can significantly improve student learning outcomes (Khan & Masood, 2015).

Second, the media used in blended learning includes LMS and WhatsApp. The research findings show that 52% of the learning process uses WhatsApp media. WhatsApp as a blended learning medium is beneficial because it is easy to use and facilitates the facilitator in responding anytime and anywhere (Gon & Rawekar, 2017). WhatsApp makes it easy for students and teachers to interact in discussing a topic (Bakshi et al., 2019). WhatsApp is also effective in increasing student interaction and contribution to discussions in a virtual room (Elshaikh et al., 2018; Gon & Rawekar, 2017). WhatsApp also enables teachers/facilitators to provide feedback/comments during class discussions (Bakshi et al., 2019).

Third, the research findings reveal an integration of character education content into multimedia. 72.07% of students answered that motivational videos are a medium used to encourage students' characters. Technology in learning contributes to improving students' attitudes during learning (Ersoy & Akbulut, 2014; Eyyam & Yaratana, 2014). Videos that include character values are exemplified by historical film footage. Through historical videos (movies), students can learn the value of the fighting spirit portrayed in the past (Paxton & Marcus, 2018). Movies or videos significantly affect the psychology of students so that they can change the students' perspectives (Kubrak, 2020). The integration of character values can also be implemented in textbooks, through stories that contain life values (Komalasari & Saripudin, 2017).

Fourth, the dominant characters developed in blended learning found in this research are critical thinking, disciplined, creative and innovative, collaborative, responsible, hard-working, and democratic. It is in line with 21<sup>st</sup> Century Skills: Learning for life in our times (Trilling & Fadel, 2009), which emphasizes critical

thinking skills, ICT literacy, creativity, and collaboration as the core values (Trilling & Fadel, 2009). These characters are related to each other. The ability to collaborate is closely related to critical thinking skills that encourage students to be innovative (van Laar et al., 2020). Strengthening character education can be complemented by using authentic assessments that include living values so that students can reflect on and clarify values in their lives (Komalasari & Masyitoh, 2022).

Fifth, the findings of this research indicate that variations in the use of learning media can be further increased. The media, such as podcasts, mind maps, interactive PowerPoints, and video explainers can be used to complete the learning media. Meanwhile, in terms of integration, character education can be integrated into the use of interactive media, motivational videos, and features in the Learning Management System (LMS) that encourage students to be more disciplined in submitting their assignments.

## **Conclusions**

The use of multimedia blended learning has been implemented in the 2021/2022 PCEP of the three universities: UNP Padang, UPI Bandung, and UNS Solo. Students have learning experiences in using a variety of alternative media, such as WhatsApp and LMS. The use of these media encourages students to be more interactive and makes it easier for lecturers/instructors to provide feedback on learning. Moreover, the media integration is expected to be more varied, especially using interactive media, such as podcasts and explainer videos. The use of relevant technology is also expected to achieve Civic's learning objective, i.e., developing students' characters today and in the future.

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