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Understanding Vocational Students' Perception of Video Animation "Physical Activity and Dietary Behavior"

M. Muktiarni[1], Sri Rahayu[1], Jonah Mupita[2]*

[1]Universitas Pendidikan Indonesia, Indonesia
[2]Ruya Adventist High School, Zimbabwe
[*]Correspondence: E-mail: muktiarni@upi.edu

A B S T R A C T

Technological advances in education have enhanced students' ability to understand knowledge about physical activity, especially in vocational education. Technology serves as an effective medium to deliver educational content, with animated videos emerging as a powerful tool for educating students on physical activity and sedentary behavior. This study explored students' perceptions of animated video-based teaching materials using a quantitative approach and an online questionnaire. The findings showed that students' perceptions aligned with the Technology Acceptance Model (TAM), with most agreeing on the effectiveness of animated videos for learning purposes. Data analysis confirmed positive agreement across TAM's four key components, indicating a high acceptance level. Animated videos were found to effectively convey educational messages, deepen students' understanding, and promote behavioral changes toward healthier lifestyles. Thus, animated videos represent a valuable innovation for enhancing physical activity awareness in vocational education settings, supporting both knowledge dissemination and positive behavior transformation.

A R T I C L E   I N F O

1. INTRODUCTION

Technology and digitalization in learning have become a trend in themselves; technology is also used as an educational medium in delivering material to students. Thus, it is easier to understand learning material (Cloete, 2017; Muktiarni *et al.*, 2021). Educators use various technologies in the learning and educational process for students in vocational education (Nyström & Ahn, 2024). Students tend to find it easier to use technology in learning (Heflin *et al.*, 2017). Students depend on technology in the learning process in this era of digitalization (Timotheou *et al.*, 2023). Digitalization of learning has grown more rapidly. Therefore, education must adapt and develop technology-based learning media to accommodate and make it easier for students to understand learning material (Muktiarni *et al.*, 2019).

Technology in learning makes it easier to access material; it does not always have to be in class, and the learning process can be carried out using blended learning (Coban et al., 2015). Students at home first study the material available on various internet sources, and then they discuss the material they have studied with teachers at school. Students start learning activities by watching video tutorials and reading sources from various materials and media online (Altass & Wiebe, 2017). Digitalization and technology can improve the quality of the learning and education process; besides that, technology is used to help understand learning material (Okoye *et al.*, 2023).

Animated videos are learning or educational media that can be used with technology integration (Sukmanasa *et al.*, 2020). Many reports regarding animated video have been reported. Animated videos can make it easier for students to understand learning material and educate them on material or social issues related to the learning material being discussed (Harrison, 2020). The advantage of animated videos as a learning medium is that they can be repeated. If students need help understanding the material, they can repeat it until they understand the material being taught. Students can retain the content in their memory by watching the video several times. Watching activities will encourage students to understand the material they are studying (Silvani, 2020).

This research has a scope regarding using animated videos in physical activity education for students in vocational education. Animated videos are an option for delivering material and providing education to students. An animated video is a moving graphic or cartoon consisting of a series of images that are successfully presented (Hanif, 2020). Animated videos contain audio support and visual stimuli. Many studies have been completed regarding animated videos in learning and education (Rosdiana & Ulya, 2021). Based on this reality, animated videos provide various perceptions to understand the components of learning activities. This perception includes students' perspectives on teaching materials presented through animated videos.

This research determined students' perceptions of activities using animated videos. Several results showed students' perceptions of using animated videos in learning. In this context, how teachers accompany students in their interests and needs is the five component of TAM. Therefore, in the teaching and learning process, students' opinions must be considered. Teachers' awareness of students' beliefs in this context will certainly be helpful when designing blended learning activities.

2. METHODS

This research used quantitative research. We provided treatment by providing learning media in animated videos to students. After being given the animated video, students are given instruments to ask for responses to the animated video.

2.1. Sample and Population

The research subjects were vocational education students spread across various fields of expertise; the sample was 255 students, consisting of 217 female and 38 male students. Samples are spread across four Skills Programs: Culinary, Digital Business, Marketing, and Motorcycle Business Engineering. The sampling technique was convenience sampling because sampling was based on the availability of elements and the ease of obtaining them. The sample willing to be involved in this research filled out the information form as proof of their willingness to be involved voluntarily as participants.

2.2. Research Instrument

We collected data using a questionnaire using a Likert scale. There are twelve statements regarding students' perceptions of the use of animated videos. This questionnaire used four Likert Scales: "Strongly Agree," Agree," Neutral," Disagree," and "Strongly Disagree." Data was then collected and analyzed using statistical analysis, as reported elsewhere.

The research instrument used to collect data was an online questionnaire. The students filled out the questionnaire via Google. We distributed via the class WhatsApp group to participate in the questionnaire. Then, we interpreted the percentage of students who stated "Strongly Agree," "Agree," "Neutral," "Disagree," and "Strongly Disagree" with the statement. The statement with the highest percentage is the student's choice statement. The data collection process includes: (i) providing treatment in the form of animated videos related to physical activity and sedentary behavior, (ii) students asked to observe animated video learning media, (iii) then students being asked to fill out a questionnaire regarding perceptions of animated videos related to physical and sedentary activity behavior.

After collecting data, we carried out descriptive analysis, such as preparing the data for analysis, reading and understanding all the data, classifying the data, interpreting the data, and drawing conclusions. This research presented a statement on using the Technology Acceptance Model (TAM) to determine students' perceptions of the use of video-based animated learning media. TAM is an information technology acceptance model developed based on the TRA (Theory of Reasoned Action) model (Granić and Marangunić, 2019; Mortenson & Vidgen, 2016).

This model has four components: perceived usefulness, ease of use of animated videos, attitudes towards using animated videos, and behavioral intention to use animated videos. In this research, the questionnaire was prepared based on five TAM components. **Table 1** contains components and indicators regarding student perceptions of the use of animated videos.

2.3. Data Analysis

Analysis of this research data uses descriptive statistical analysis, Frequencies. Data analysis was conducted using SPSS version 25.

3. RESULTS AND DISCUSSION
3.1. Respondent Characteristics

   Table 1 outlines the key components and corresponding indicators used to measure students' perceptions regarding the use of animation videos in educational settings. These components capture various aspects of how students interact with, comprehend, and are influenced by animated learning materials, particularly about ease of use, understanding of content, relevance of material, and behavioral motivation toward healthy lifestyles.

Table 1. Components and indicators of student perceptions of the use of animation videos.

No	Component	Indicator
1	Perception about the ease of using animated videos	Ability to use animated videos as learning media and educational media
2	Perception regarding understanding of learning material	Make it easier for students to understand. It makes it easier for students to understand the material and the education the teacher provides
3	Perceptions about the content of the material	The material presented in the animated video is based on students' needs
4	Perceptions about motivation to adopt a healthy lifestyle	Students' behavior in applying a healthy lifestyle to their daily physical activities

   The first component, Perception about the ease of using animated videos, refers to students' ability to effectively utilize animated videos as both learning and educational tools. A positive perception in this area indicates that students find the technology accessible and user-friendly, facilitating smoother integration into their learning processes. The second component, Perception regarding understanding of learning material, highlights the role of animated videos in simplifying complex concepts. Students who perceive animation as beneficial for understanding materials likely experience enhanced comprehension and retention of educational content delivered by teachers. The third component, Perceptions about the content of the material, assesses the degree to which students find the material presented in the animations relevant and aligned with their learning needs. High relevance suggests that the animated content is well-targeted and resonates with students' academic or developmental requirements. The fourth component, Perceptions about motivation to adopt a healthy lifestyle, explores how the animated videos influence students' behavioral intentions, particularly in adopting and maintaining healthy physical activities. A strong positive perception in this area would indicate that the educational videos not only convey information but also successfully motivate real-life behavioral changes among students.

   Together, these components provide a comprehensive framework for evaluating the effectiveness of animated videos as educational media in fostering cognitive and behavioral development in students. The respondents' characteristics in this research were class level, gender, and skills program. The results of descriptive data analysis using frequencies are in **Figure 1** the distribution of respondents' grade levels. There are 215 (84%) students in grade 11, 22 (9%) students in grade 12, and the remaining 18 (7%) students in grade 10. Data on the gender distribution of respondents: 217 (85%) were female students, and the remaining 38 (15%) were male students involved in this research.

Figure 1 shows data on the distribution of respondents' skills programs; there are 125 (49%) students in the culinary skills program, 78 (31%) students in the marketing skills program, 42 (16%) students in the Digital Business skills program, and the remaining 10 (4%) students in the Motorcycle Engineering and Business expertise.
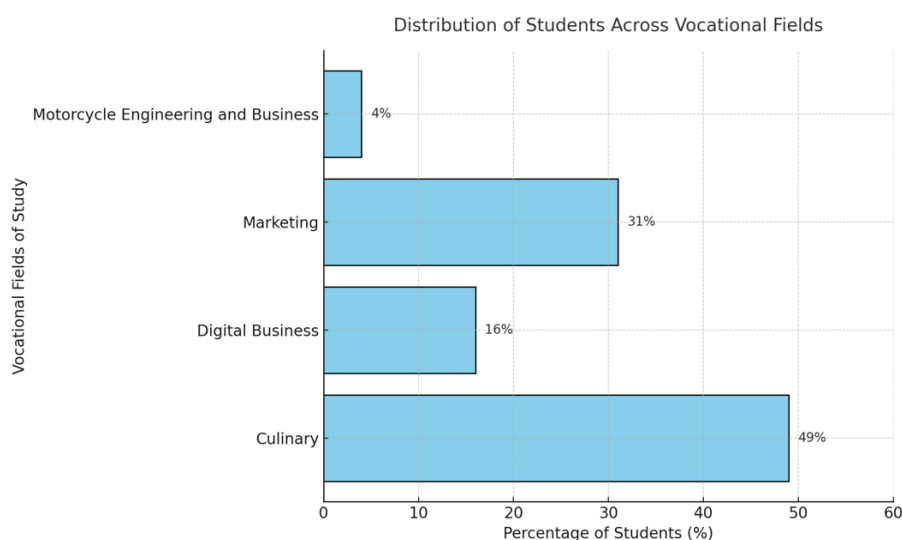
Figure 1. Data on distribution of respondent skills programs.

3.2. Analysis of Student Perception on the Use of Animation Video Learning and Education Media

The research data is divided into four parts: perceptions regarding the ease of using animated videos, perceptions regarding understanding the learning material, perceptions regarding the material's content, and perceptions regarding motivation to adopt a healthy lifestyle. The results of the research data are presented in **Table 2**.

Table 2. Perceptions regarding the ease of using animation videos.

No	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Sedentary Behavior Animation Video Media is attractive in terms of appearance to support learning material for understanding nutrition education material.	6%	74%	20%	0%	0%
2	Sedentary Behavior Animation Video Media is easy to access and can support learning material for understanding nutrition education.	23%	51%	26%	0%	0%
3	Sedentary Behavior Animation Video Media is more accessible and can be accessed using various electronic devices (cell phones, laptops, tablets, etc)	7%	53%	40%	0%	0%
4	Sedentary Behavior Animation Video Media is easier to use as an electronic learning medium because it can be used by various groups (parents, adults, teenagers, and children)	7%	53%	40%	0%	0%

Based on **Table 2**, more than half of the students (74%) agree that the Sedentary Behavior Animation Video is attractive in terms of appearance. Thus, it can support learning materials for understanding nutrition education materials. More than half of the students (51%) agree that Sedentary Behavior Animation Videos are easy to access, so they can support learning material for understanding educational material. More than half of the students (53%) agree that sedentary behavior animation videos are easier to access and can be accessed using various electronic devices (cell phones, laptops, tablets, etc.). More than half of students (53%) agree that animated sedentary behavior videos are easier to use as electronic learning media because they can be used by various groups (parents, adults, teenagers, and children). Animated videos as a learning medium are easy to use (Barut Tugtekin & Dursun, 2022). Animated videos display text, sound, images, and movement to make it easier for students to absorb learning material (Haleem *et al*., 2022; Nikou *et al*., 2021). Apart from that, animated videos have an attractive appearance. Thus, students can enthusiastically study material; material that is initially difficult will become easier when assisted with learning media in the form of animated videos (Puspitarini & Hanif, 2019; de Mello Heredia *et al*, 2019). Next, **Table 3** discusses perceptions of understanding of learning material.

Based on **Table 3**, more than half of the students (67%) strongly agree that animated sedentary behavior video media allows students to better understand healthy lifestyles in nutrition education. Less than half (40%) of students agree that animated videos of sedentary behavior make it easier for students to understand the description of a healthy lifestyle that must be implemented, including physical activity and health. Animated videos make it easier for students to understand the material being taught (Aththibby, 2021; Macwan, 2015). Animated videos as one of the learning media make it easier for students to understand the learning context (Schmid *et al*., 2014); exciting learning media can support the learning process to be more interactive (Puspitarini & Hanif, 2019); besides that, material made in video form will very easy to share with students with various applications (Haleem *et al*., 2022). Next, **Table 4** discusses the material's content in the animated video.

Based on **Table 4**, more than half of the students (54%) have a neutral opinion that the sedentary behavior animation video media is relevant to the material in nutrition education subjects at school, more than half of the students (69%) agree that the sedentary behavior animation video media behavior contains learning material that can increase my understanding of healthy lifestyle nutrition education material, more than half of the students (53%) agree that the sedentary behavior animated video media contains material that is easy to understand (Fauziah *et al*., 2022; Baranowski *et al*., 2008; Lyons *et al*., 2012). More than half of the students (53%) agree that the sedentary behavior of animated video media motivates them to learn more about nutrition education related to physical activity. Motivation to learn appears when the learning process is enjoyable (Harlen & Deakin Crick, 2003; Susanti *et al*., 2022); students will feel interested when there is a two-way interaction, not only as they receive the material, but there is communication that occurs between students and teachers (Gardner, 2019; Priadi, 2020; Tan *et al*., 2019). As a facilitator, the teacher provides learning media in the form of animated videos, and students use animated videos as a supplement to the learning process (Harrison, 2020). Enjoyable learning by integrating technology can motivate students to improve student learning outcomes and help students better understand the learning material provided (Puspitarini & Hanif, 2019; Chuang, 2014; Berns *et al*., 2016; David & Weinstein, 2024). Next, **Table 5** discusses student perceptions related to student behavior, namely, motivation to adopt a healthy lifestyle.

Based on **Table 5**, more than half of the students (55%) chose neutral that the sedentary behavior animated video media motivated them to do physical activity as part of a healthy

lifestyle, and more than half (57%) of the students chose neutral that the video media. The sedentary behavior animation motivated me further to increase my knowledge about healthy lifestyles in nutrition education (Piziak, 2014; Holzmann *et al.*, 2020; Doré *et al.*, 2023). Animated videos have a positive influence; students afterward have the motivation to want to change for the better (Barut Tugtekin & Dursun, 2022; Gedik *et al.*, 2024). These changes provide evidence that the integration of technology in learning has a good impact if its use is monitored and directed (Lawless & Pellegrino, 2007; Timotheou *et al.*, 2023; Mdhlalose, 2023). Vocational education requires mastery of students' knowledge and skills (Rahmadhani & Suryati, 2022). Therefore, integrating technology in learning in vocational education is the most appropriate step (Habibi *et al.*, 2023; Bappa-Aliyu, 2012; Antonietti *et al.*, 2022). Students in vocational education will be able to master concepts and have the skills to balance students' knowledge and skills (Calero & Rodríguez-López, 2020).

Table 3. Perceptions regarding the content of the material.

No	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Sedentary Behavior Animation Video Media allows me to understand a healthy lifestyle better through nutrition education.	67%	25%	7%	0%	0%
2	Sedentary Behavior Animation Video Media makes it easier for me to understand the description of a healthy lifestyle that must be implemented through physical activity and health.	24%	40%	36%	0%	0%

Table 4. Perceptions regarding understanding learning material.

No	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Sedentary Behavior Animation Video Media is relevant to the material in nutrition education subjects at school.	4%	42%	54%	0%	0%
2	The Sedentary Behavior Animation Video Media contains learning material that can increase my understanding of healthy lifestyle nutrition education material.	69%	7%	25%	0%	0%
3	Sedentary Behavior Animation Video Media contains material that is easy to understand.	7%	53%	40%	0%	0%
4	The Sedentary Behavior Animation Video motivated me to learn about nutrition education.	7%	53%	40%	0%	0%

Table 5. Perceptions regarding motivation to adopt a healthy lifestyle.

No	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Sedentary Behavior Animation Video Media motivates me to do physical activity as part of a healthy lifestyle.	6%	38%	55%	0%	0%
2	Sedentary behavior animated video media motivates me to increase my knowledge about healthy lifestyles in nutrition education.	8%	35%	57%	0%	0%

4. CONCLUSION

Digitalization and technology integration in learning make it easier for vocational education students to understand the material. Vocational education students must understand lessons both conceptually and master skills. Therefore, integrating animated video learning media can make it easier for students to master the material. Technology has a vital role in disseminating learning material; apart from that, it can also be a means of education regarding physical activity and sedentary behavior. This research was conducted to see students' responses to animated videos integrated into the educational learning process. Students feel that animated videos are practical for use as learning media. Student responses regarding animated videos are seen from four Technology Acceptance Model (TAM) components. The results of the analysis show that students agree with animated videos as learning and educational media.

5. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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