

## Usability of Screencast in 1st Basic Physics Lectures During the Covid-19 Pandemic: Student's Perception Analysis

Ernita Susanti\*, Rahmat Rizal, dan Dwi Sulistyaningsih

Department of Physics Education Universitas Siliwangi, Tasikmalaya, Indonesia

\*ernita.susanti@unsil.ac.id

### Abstract

The enactment of Work from Home (WFH) during the Covid-19 pandemic has affected educational activities. Conventional offline learning must be held online so that effective online learning media is needed. The screencast is an online learning media that believed can provide easy access to students in conducting an online lecture. The screencast is a digital video recording on the computer screen and usually includes audio narration. This study aimed to analyze students' perception on screencast use in 1st Basic Physics lectures during the Covid-19 pandemic. This research involved 76 physics education students in one of the higher education institutions in Tasikmalaya. They consist of 9 males and 67 females in the age range (18-21 years). This research is a descriptive study, with data collection techniques using a Likert scale questionnaire. Analysis of students' perceptions of screencast aspects (content, construct, language, and graphic) are good, with a value of 79. Then, analysis of screencast implications on changes in students' knowledge and skills are a good category with a value of 78. The analysis of students' perceptions found a positive response using screencast in 1st Basic Physics lecture. The screencast can be effective online learning media to enhance student's knowledge and skills

**Keywords:** Covid-19; pandemic; 1st basic physics; screencast; student's perceptions

*Received* : 12 Agustus 2021

*Accepted* : 3 November 2021

*Published* : 4 November 2021

DOI : <https://doi.org/10.20527/jipf.v5i3.3903>

© 2021 Jurnal Ilmiah Pendidikan Fisika

**How to cite:** Susanti, E., Rizal, R., & Sulistyaningsih, D. (2021). Usability of screencast in 1st basic physics lectures during the covid-19 pandemic: Student's perception analysis. *Jurnal Ilmiah Pendidikan Fisika*, 5(3), 459-465.

### INTRODUCTION

Covid-19 is a new type of virus that has never been identified before in humans, and it has not been known that animals can transmit the virus. The spread of this virus very fast; this plague is affecting almost all countries, including Indonesia. Covid-19 is expected to enter Indonesia in March 2020. Based on data from the Task Force for the acceleration of handling Covid-19 to August 2020, there were 115.056 positive cases in Indonesia. The government has used various ways to

break the chain of the spread of the virus. One way that the government does this is by doing WFH.

The enactment of WFH during the Covid-19 pandemic has affected educational activities. The conventional offline learning implemented on daily lectures must be held online. Online learning is more interesting to enhance student learning outcomes (Nguyen, 2015) and becomes trend learning for the digital native close to the technology (Rahmat Rizal, Susanti, et al., 2020). Therefore, implementing online learning

in college students needs a set of skills in using digital technology (R. Rizal et al., 2019). Technology usage in teaching makes the learning process more fun as well as facilitates understanding of content more effectively (Fook et al., 2011)

The implementation of technology in online lectures on the 1st Basic Physics course aims to help students solve various learning problems, increase student motivation to learn, foster independent learning abilities, and enable learning interactions wherever and whenever. To achieve these objectives, It takes an effective learning media that can make easy learning process.

The learning media that can be used in learning and is believed to address students' issues better and are clearer is the screencast. Screencasts can be developed on any material content and can be exploited in various educational settings (Soto & Ambrose, 2016) (Twabu, 2018) (Fraser & Maclaren, 2012). A screencast is a digital video and audio recording of what occurs on a presenter's computer screen, and it can be used to create sophisticated, information-rich multimedia presentations (Ghilay & Ghilay, 2015). It can increase online learning experiences when compared with traditional format text (Sugar et al., 2010)

The using screencast in 1st Basic Physics is based on several considerations. Previous research shows that screencast has many benefits in learning any subject (Ramli et al., 2017). A screencast can explain the steps of learning material clearly and makes a more flexible learning time. The students can watch the screencast once or several times, re-wind and understand a difficult concept (Evans, 2011). Screencasts likewise enable the students to learn in a more coordinated way, one that suits the individual student's style and speed of learning (Twabu, 2018). A screencast

also can save a significant amount of time for lecturers (Mullamphy et al., 2010).

A Screencast is multimedia-based learning because it involves multimodal sensory, namely the eyes and ears (Abdul Razak & Mohamad Ali, 2016). The eye is involved when watching videos delivered through the movement of images, and the ear is involved when listening to audio. Multimodal sensory provides opportunities for learning to understand better than video text or narration (Ozsvald, 2010). Therefore, a screencast is a multimedia alternative that is easy to use and helps fill a need for dynamic, engaging content (Ruffini, 2010).

The screencast media is used to record PowerPoint slides so that it becomes a tutorial video, in which the lecturer seems to conduct learning in the lecture room. The first thing to do is to prepare slides for the material to be taught.

The recording process uses the insert menu in Microsoft PowerPoint. Then select the screen recording menu. After that, a new toolbar will appear at the top of the laptop screen. Before recording, adjust the area of the laptop screen you want to record by selecting the lecture area menu on the toolbar. After that, do the recording process by selecting the red round button on the toolbar. After the recording process is finished, the video recording results are automatically added to the Microsoft PowerPoint presentation document. Then the video was shared through a variety of other learning media such as Google classroom and telegraph.

In 1st Basic Physics learning, screencast media has been used on thermodynamic and static fluid material. The obstacle experienced when making a screencast is noise when the audio recording process. Therefore, the use of screencast media in the implementation of learning needs to be studied more deeply so that learning can be known,

which can be desirable for students in the learning process during a pandemic; the student response will be studied in the form of students' perception.

Theoretically, the screencast can provide some benefits to achieve learning objectives, but the ineffective learning media design influences a bad impact on the student. Comprehensive evaluation activities are needed to determine the success of a program, including lectures (Rahmat Rizal, Rusdiana, et al., 2020). Therefore, it evaluates the implementation of a screencast in 1st Basic physic that can be measured through students' perception.

Perception is the process of selecting and identifying information from the environment (Alvarado et al., 2011). This student's perception is a valuable form of evaluation in learning as a basis for improving the quality of future learning (Ceroni et al., 2016). It aims to know what students need in the learning activity to reach the learning goals (Hidayat & Handayani, 2018).

Therefore, this study aims to determine the Perception of Physics education students on the use of media screencast in the lectures of 1st Basic Physics during the Covid-19 pandemic.

## METHOD

This research is descriptive by surveying students of Physics education in one of the tertiary institutions in the city of Tasikmalaya. Data collection techniques using a Likert scale questionnaire (specify the range of Likert scale used), with a sample of physics education students class of 2019 totalling 76 people selected randomly. They consist nine males and 67 females in age range (18 - 21 years)

The instrument used in this research is a valid and reliable questionnaire of students' perceptions. The experts have

judged the questionnaire using an Expert validation sheet and analyzed using product-moment and alpha equations. Data were collected using a questionnaire is analyzed by percentage score generated from the Likert scale calculation. The Likert scale is used to measure the attitudes, opinions, and perceptions about the event by giving a score by predetermined weights.

The distribution of the data analysis results can be seen in Table 1 (Rizal et al., 2020).

Table 1 Distribution of Perception Analysis Results

Percentage average	Criteria
85 – 100	Very high
70 – 84	High
55 – 69	Moderate
40 – 54	Low
0 – 39	Very low

Based on Table 1, the analysis results are categorized as good if they average 70.

## RESULT AND DISCUSSION

The data obtained were students' perceptions of the use of media screencast in 1st Basic Physics lectures during the Covid-19 pandemic. Data were presented based on aspects observed descriptively qualitatively based on responses submitted by students.

Analysis of students' perceptions of component and contents screencast did against four aspects: the content, construct aspect, language aspect, and visual aspect. The analysis also carried out on the implications of a screencast for changing students' knowledge and skills.

The results of student perception analysis can be seen in Table 2 and Table 3.

Table 2 Results of Analysis of Student Perceptions of Screen-cast Components and Content

Statement	Percentage	Category
<b>Content Aspects</b>		
The material presented through screencast media is easy to understand.	71	High
The material presented through screencast media is coherent and systematic.	81	High
Information conveyed in the media screencast is clear.	80	High
<b>Construct Aspects</b>		
Screencast media is easy to use.	80	High
A Screencast can be used anytime and anywhere.	83	High
A Screencast can be used for independent learning.	83	High
The video quality is good and clear.	78	High
The video quality was good and clear.	76	High
<b>Language Aspects</b>		
The sound of the dubber sound in screencast media is good and clear.	78	High
Dubber explanation in screencast media is easy to understand.	78	High
<b>Graphic Aspect</b>		
The choice of type and size of letters in screencast media is easy to read.	80	High
The pictures, examples, and illustrations that have been provided are appropriate and appropriate to support understanding.	80	High
The screencast media display design is appropriate and attractive for users.	80	High

Table 3 Results of Analysis of Implications of Media Screencast for Changes in Student Knowledge and Skills

Statement	Percentage	Category
The use of a media screencast can increase the effectiveness of my learning.	77	High
The use of media screencasts can make it easier for me to complete lecture assignments.	78	High
The use of screencast media can help improve my motivation to study physics.	74	High
The use of a media screencast can provide a new learning experience.	82	High
The use of a media screencast can help me in understanding the learning material.	78	High
The use of a media screencast can help me improve my learning concentration.	73	High
The use of screencast media involves multimodal sensory that is, the eyes and ears.	84	High
The use of screencast media can accommodate my learning style and learning speed.	76	High

Based on Table 3, The students' perceptions of content and components screencast in four aspects: content,

construct, language, and graphics. The average overall student perception results were 79.

In the content's aspect, there is a video explaining the learning material. That highest percentage is in the material presented systematically with a percentage of 81 with a high category. The lowest is in the material presented on an easily understood with a percentage of 71—the contents of the material presented from a low level-experience to a high-level experience.

In the constructs' aspect, the highest percentage seen in the ease uses the screencast. A Screencast can use anytime and anywhere and for independent learning with a percentage of 83. According to their abilities, the screencast allows students to process and listen to learning at their own pace. So, a screencast is an effective medium for lecturers and students in learning. The lowest percentage is in the ease of downloading media screencasts because a good internet connection does not cover all students.

The aspects of language include readability, clarity of information, compatibility with the Indonesian language is good. In this paper, the language aspect from the sound pronunciation of dubber is good, and the explanation of the dubber is easy to understand with a percentage of 78. However, in some parts of the video have trouble occurs when the recording process.

The graphics aspect includes the used font type and size, layout, illustration, images, photos, and display design. The font type and size of letters are easy to read, with a percentage of 80. The pictures, examples, and illustrations presented are appropriate in supporting students' understanding with a percentage of 80. Screencast display design is more attractive as possible and easy to operate with a percentage of 80. A screencast is one of the most powerful tools for creating productive training, tutorials, and presentations (Ramli *et al.*, 2017).

The results analysis of screencast implications on changes in students' knowledge and skills in Table 4 are a good category. This indicates that using a screencast can increase the effectiveness of student learning, where students assume used a screencast very effective and efficient for learning (Ghilay & Ghilay, 2015) so that the screencast can make the teaching-learning process more meaningful.

A screencast can make it easier for students to understand learning material. The students can watch the screencast when it suits their schedules and lifestyles; they can watch it once or several times and re-wind and discuss a complicated concept (Evans, 2011). A screencast can motivate the students and can help students learn activities independently.

Learning using a screencast, called multimedia-based learning, combines a variety of media such as audio and video to provide a new learning experience for students and involve multimodal sensory, namely the eyes and ear. The eye is involved when watching videos delivered through images, and the ear is involved when listening to audio. Therefore, multimodal sensory provides opportunities for learning to understand better than video text or narration (Ozsvald, 2010).

## CONCLUSION

Based on the analysis, it was finding a positive response using a screencast in the 1st Basic Physics lecture. The students' perceptions of content and components screencast in the content aspect, construct aspect, language aspect, and graphics aspects reach a high level. The screencast has a good impact on changing student knowledge and skills. The average level of the students' perceptions reaches a high level. The screencast can be an effective online learning medium to enhance students' knowledge and skills. The screencast can

implement in other subjects that have the same characteristics as 1st Basic Physics.

## REFERENCE

- Abdul Razak, M. R., & Mohamad Ali, A. Z. (2016). Instructional screencast: A research conceptual framework. *Turkish Online Journal of Distance Education*, 17(2), 74–87. <https://doi.org/10.17718/tojde.21316>
- Alvarado, S., Kanter-Braem, B., Manz, K., Masciopinto, P., McKenna, E., Nelson, D., Williams, C., & Korek, K. (2011). Sensation and perception: a unit lesson plan for high school psychology teachers. *National Standards for High School Psychology Curricula*, 1–46.
- Ceroni, M. R., Carpigiani, B., Castanheira, M. P., & Silva, A. A. da. (2016). The Perception of Teachers about Students' Potentialities and Difficulties. *Procedia - Social and Behavioral Sciences*, 217, 958–966. <https://doi.org/10.1016/j.sbspro.2016.02.070>
- Evans, D. J. R. (2011). Using embryology screencasts: A useful addition to the student learning experience? *Anatomical Sciences Education*, 4(2), 57–63. <https://doi.org/10.1002/ase.209>
- Fook, C. Y., Sidhu, G. K., Shah, N. K. M., & Aziz, N. A. (2011). Pre-service teachers' training in information communication and technology for the ESL classrooms in Malaysia. *Turkish Online Journal of Distance Education*, 12(3), 97–108. <https://doi.org/10.17718/tojde.56165>
- Fraser, A., & Maclaren, P. (2012). Patterns of instruction: Using screencasts in the teaching of textile design. *Futures Challenges, Sustainable Futures*, 16, 331–332. <https://doi.org/https://doi.org/10.1007/s10798-005-4327-y>.
- Ghilay, Y., & Ghilay, R. (2015). Computer courses in higher-education: improving learning by screencast technology. *I-Manager's Journal of Educational Technology*, 11(4), 15–26. <https://doi.org/10.26634/jet.11.4.3148>
- Hidayat, H., & Handayani, P. G. (2018). Self regulated learning (study for students regular and training). *Jurnal Penelitian Bimbingan Dan Konseling*, 3(1), 50–59. <https://doi.org/10.30870/jpbk.v3i1.3196>
- Mullamphy, D., Higgins, P., Belward, S., & Ward, L. M. (2010). To screencast or not to screencast. *ANZIAM Journal*, 51, 446. <https://doi.org/10.21914/anziamj.v51i0.2657>
- Nguyen, T. (2015). The effectiveness of online learning: Beyond no significant difference and future horizons. *MERLOT Journal of Online Learning and Teaching*, 11(2), 309–319.
- Ozsvald, I. (2010). *The screencasting handbook: Teaching you to become a better broadcaster (1st ed.)*. <https://thescreencastinghandbook.com/>
- Ramli, R., Suriani, A., Yunus, M., Mohid, S. Z., Abas, H., & Baharudin, H. (2017). A review on the innovative use of screencast technique for learning 3D animation software. *Fstm.Kuis.Edu.My*, September, 42–48. <http://fstm.kuis.edu.my/icits/2017/eprceeding/IC-ITS2017 IT12 pp42-48 Roslinda.pdf>
- Rizal, R., Rusdiana, D., Setiawan, W., & Siahaan, P. (2020). Students perception of learning management system supported smartphone: Satisfaction analysis in online physics learning. *Jurnal Pendidikan IPA Indonesia*, 9(4), 600–610. <https://doi.org/10.15294/jpii.v9i4.25363>
- Rizal, R., Setiawan, W., & Rusdiana, D.

- (2019). Digital literacy of preservice science teacher. *Journal of Physics: Conference Series*, 1157(2). <https://doi.org/10.1088/1742-6596/1157/2/022058>
- Rizal, Rahmat, Rusdiana, D., Setiawan, W., & Siahaan, P. (2020). Digital literacy test: development of multiple choice test for preservice physics teachers. *International Journal of Advanced Science and Technology*, 29(03), 7085–7095.
- Rizal, Rahmat, Susanti, E., Sulistyarningsih, & Budiman, D. M. (2020). Desain evaluasi program pelatihan guru fisika profesional. *Diffraction*, 2(1), 30–37. <https://doi.org/10.37058/diffraction.v2i1.1695>
- Soto, M., & Ambrose, R. (2016). Screencasts: Formative assessment for mathematical thinking. *Technology, Knowledge and Learning*, 21(2), 277–283. <https://doi.org/10.1007/s10758-015-9272-6>
- Sugar, W., Brown, A., & Luterbach, K. (2010). Examining the anatomy of a screencast: Uncovering common elements and instructional strategies. *International Review of Research in Open and Distance Learning*, 11(3), 1–20. <https://doi.org/10.19173/irrodl.v11i3.851>
- Twabu, K. Y. (2018). Screencast as a technology enhanced teaching tool at an open distance learning university in south africa [University of South Africa]. In *University of South Africa*. <http://hdl.handle.net/10500/24937>