



# Is the "Human Reproductive System" Interactive Learning Video Appropriate for Equality Education Programs?

Habib Sudira<sup>1\*</sup>, Nurdin Ibrahim<sup>2</sup>, Priyono<sup>3</sup> 

<sup>1,2,3</sup>Postgraduate Educational Technology, State University of Jakarta, Indonesia

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## ABSTRAK

*Pembelajaran jarak jauh memberikan berbagai dampak terhadap peserta didik seperti hasil belajar dan minat belajar. Hasil belajar selama pembelajaran jarak jauh dan pembelajaran tatap muka memiliki perbedaan. Bahan belajar yang digunakan peserta didik program Paket B selama pelajaran jarak jauh hanya berupa e-modul. Tujuan penelitian ini adalah untuk menciptakan video pembelajaran interaktif "sistem reproduksi manusia" pada pelajaran IPA. Penelitian ini merupakan penelitian pengembangan dengan menggunakan model Hannafin and Peck. Teknik pengumpulan data dalam penelitian ini terdiri dari wawancara dan angket. Teknik analisis data dalam penelitian dan pengembangan ini menggunakan teknik analisis data kuantitatif dan analisis data kualitatif. Berdasarkan penelitian menunjukkan gaya belajar peserta didik didominasi oleh gaya belajar audiovisual; usia peserta didik program paket B mulai dari usia 14 tahun sampai dengan usia 37 tahun; penggunaan video pembelajaran interaktif dapat mengatasi berbagai keterbatasan pengalaman yang dimiliki peserta didik program paket B. Video pembelajaran interaktif dapat dimanfaatkan untuk hampir semua topik, tipe belajar, dan setiap ranah mulai dari kognitif, afektif, dan psikomotorik serta memberikan dampak yang positif dalam proses pembelajaran.*

## ABSTRACT

Distance learning impacts students, such as learning outcomes and learning interests. Learning outcomes during distance learning and face-to-face learning have differences. The learning materials used by Package B program students during distance learning are only in the form of e-modules. Natural Sciences (IPA) subjects, especially "Human Reproductive System," are Package Program students' most difficult material. Interactive learning videos are believed to be one of the effective learning media to improve student learning outcomes, get positive responses from students, and can be used for independent learning. This study aimed to develop an interactive learning video, "human reproductive system," in natural science lessons. This research is development research using the Hannafin and Peck model. Data collection techniques in this study consisted of interviews and questionnaires. Data analysis techniques in this research and development use quantitative and qualitative data analysis techniques. Several conclusions can be drawn based on the research that has been carried out. Audiovisual learning styles dominate students' learning styles; the age of package B program students ranging from 14 years old to 37 years old; interactive learning videos can overcome the various limitations of experience that package B program students have. Interactive learning videos can be used for almost all topics, types of learning, and every domain starting from cognitive, affective, and psychomotor, positively impacting the learning process.

## 1. INTRODUCTION

Technological developments affect various areas of human life. Technological developments have become imperative in various fields since entering the 21st century and the industrial revolution 4.0, and education is no exception (Jufriadi et al., 2022; Müller et al., 2021). Various competencies, skills, and characters are relevant to the demands of the 21st century, and the industrial revolution 4.0 must be owned by human resources in education (Farzana et al., 2018; Puspitarini et al., 2019). Various policies issued by the government aim to support the achievement of competence, skills, and character by the 21st century and the industrial revolution 4.0 (Octavius et al., 2020; Supriyadi et al., 2020). Each agency or educational institution integrates the policy with its internal policies through this policy. Technological developments in the field of education affect the learning experience. These learning experiences are like experiences in studying learning materials, experience in using learning media, experience in applying learning methods, and experience in applying learning models and strategies (Hua et al., 2020; Suryana et al., 2021). UNESCO classifies the stages of using Information and Communication Technology in learning

\*Corresponding author.

E-mail addresses: [habibsudira@gmail.com](mailto:habibsudira@gmail.com) (Habib Sudira)

into four stages: emerging, applying, integrating, and transforming.

Integration of Information and Communication Technology in learning has been done through education at various levels, from preschool, junior high school, and senior high school, to higher education (Ahmadi et al., 2017; Anshori, 2017). Information and Communication Technology is not only integrated into face-to-face classroom learning but is also implemented in learning outside the classroom, such as online learning and distance education (Anggita, 2021; Anggraeni et al., 2021). The integration of Information and Communication Technology in learning is increasing, especially in 2020, to be precise, when the central government and local governments issued policies to implement distance education as a result of the COVID-19 outbreak or pandemic. The Covid-19 pandemic has had various impacts on the education sector (Novita et al., 2021; Nurohmah et al., 2021). The pandemic has not only hurt the education world but has also had many positive impacts. The Covid-19 pandemic has made education in Indonesia produce more and more innovations and foster creativity for students and educators (Indrayana et al., 2020; Putri et al., 2021). The Covid-19 pandemic encourages and enhances the integration of Information and Communication Technology by educators and students in learning (Franchi, 2020; Ramdani et al., 2020). Information and Communication Technology-based learning is important in transforming 21st-century learning so that the ability of Information and Communication Technology of educators and students becomes the main requirement in 21st-century learning.

The Center for Community Learning Activities is a non-formal education unit that organizes equality education. The Community Learning Activity Center is also one of the educational units affected by the central government's and local governments' policies to implement distance learning as an alternative educational solution during the outbreak of the Covid-19 pandemic. The odd semester of the 2020/2021 academic year has passed with the implementation of full distance learning. The application of distance learning in the odd semester has had various impacts, such as learning motivation, interest in learning, and learning outcomes. Distance learning also impacts the implementation of equality education programs at the Center for Community Learning Activities. For example, at the Center for Community Learning Activities 16 Rawasari, the package B program is equivalent to junior high school. There are fluctuations and instability in student attendance during distance learning. Science tutors acknowledged that there was a significant difference between the average scores for science classes in the even semester of the 2020/2021 academic year and the even semester of the 2019/2020 school year. Problems in implementing the package B program, especially science subjects, need an alternative solution immediately.

The solution to solving the problem is that interactive learning videos are believed to be one of the effective learning media to improve student learning outcomes, get positive responses from students, and can be used for independent learning. Video's ability to visualize material is effective in helping convey dynamic material (Jia et al., 2021; Noetel et al., 2021). The developed learning videos can train and improve students' thinking skills, not just the ability to retain or repeat teacher information (Hartini, 2021; Suryani et al., 2020). Information and Communication Technology provides learning convenience, especially using various learning media. Using the right media will provide students with the right learning experience to build their knowledge of a concept (Andel et al., 2020; Sulaksana et al., 2021). The more concrete the media used, the higher the experience gained by students (Fahrurrozi et al., 2017). Using good and student-oriented learning media can improve the quality of the learning process (Styowati et al., 2022; Sulaksana et al., 2021).

Previous research findings state that using technological media that is done correctly can make learning activities more effective and efficient (Ar et al., 2021; Layona et al., 2017). Learning videos are feasible and valid to use in the learning process (Hariati et al., 2020; Octavyanti et al., 2021; Warju et al., 2020). Research on video learning media has been carried out a lot, but this research develops learning videos, especially on reproductive system material. This study aimed to create an interactive learning video, "human reproductive system." Using interactive learning videos, which are expected to help with the difficulties students face during the learning process, can improve the quality of learning and student learning outcomes.

## 2. METHODS

The type of research used in this research is research and development or research and development. The type of research and development chosen is product oriented. The design stage of this interactive learning video product combines the Hannafin and Peck development model by applying A Seven-Principle For Designing And Developing Video Lessons (seven principles for designing and developing video lessons) and Principles and Guidelines for Maximizing Student Learning from Video Content: Cognitive load, student engagement, and active learning (principles and guidelines for

maximizing student learning from video content: cognitive load, student engagement, and active learning). The implementation of data collection in research and development is carried out online and offline. The needs analysis stage at the Community Learning Activity Center 16 Rawasari was carried out by observing and interviewing science tutors. Data from interviews with tutors for science subjects concluded that during distance learning, students experienced difficulties resulting in decreased learning outcomes, decreased number of students during the distance learning process, and the learning media used seemed monotonous and the characteristics of students at Community Learning Activity Centers 16 Rawasari program package B.

Data collection through a questionnaire distributed to students at the Community Learning Activity Center 16 Rawasari package B program regarding perceptions of the level of difficulty of science material, the age of package B program students, the learning styles of package B program students, and the learning media that package B program students like the most. The results of the analysis phase obtained data in the form of decreased learning outcomes, especially in science subjects where the material "reproduction system" is the material with the highest level of difficulty and also based on learning styles and learning media that is most helpful for package B program students is to use learning videos interactive. Data collection techniques in this study consisted of interviews and questionnaires. The interview is one of the data collection techniques that is carried out orally with the help of interview guidelines. Data analysis techniques in this research and development use quantitative and qualitative data analysis techniques. This research and development use quantitative data analysis techniques for data obtained at the analysis and validation stages using instruments like a questionnaire with a Likert scale.

### 3. RESULT AND DISCUSSION

#### Results

The Community Learning Activity Center (PKBM) is a place where all community learning activities are aimed at increasing their knowledge, skills/expertise, hobbies, or talents, which are managed and organized by the community itself so that they can be more independent in meeting their daily needs, including in terms of increasing their income. The data obtained during the observation at the Center for Community Learning Activities 16 Rawasari program package B, namely: perceptions of the difficulty level of science material; decreased learning outcomes, especially in science subjects; the age of package B program students at the Community Learning Activity Center 16 Rawasari ranging from 14 years old to 37 years old; audiovisual learning styles dominate the learning styles of package B program students. Students in community learning activity centers are mostly from disadvantaged communities, dropping out of school, dropping out and students who are of productive age and want to increase their knowledge, so community learning activity centers can be an alternative chosen to serve as a venue for the community empowerment process, this is in line with the aim of the community learning activity center to explore the many potentials of the community that have not been optimally developed so far.

During distance learning, students receive material in the form of e-modules that can be accessed via the <https://emodul.kemdikbud.go.id/> page and videos (youtube) shared by tutors. In the distance learning process, many students are less active due to a lack of understanding regarding the material provided by tutors and learning media that could be more efficient. Students must complete and master all the science subject matter the tutor has distributed. The material distributed is in the form of abstract concepts. The success of learning science subjects can be determined based on students' learning experiences. The learning experience of students can be pursued by using appropriate learning strategies. In addition, by utilizing various learning media that are interesting and by the characteristics of students such as students' learning styles.

#### Discussion

Interactive learning videos are a part of audiovisual learning media. Interactive learning videos are a learning media widely used during distance learning, both before and during the covid-19 pandemic (Aryani et al., 2021; Astuti et al., 2017). Learning videos support distance learning because they can be easily shared through various video sites such as YouTube and Google Drive and applications accessed via students' cellphones and laptops (Mahendra, 2021; Pujawan, 2019). This finding is reinforced by previous research stating that video in learning makes it possible to overcome real-world constraints and explore digital space's possibilities (Fahrurrozi et al., 2017; Yudiyanto et al., 2020). Videos can be integrated into online learning systems, such as various types of Learning Management Systems and e-classes, and can be combined with other services (Adhipertama et al., 2020; Rohman et al., 2020). The development of video learning media based on Microsoft Office PowerPoint on natural science objects and their observations is

suitable for use as alternative learning media in science learning, which can be used for students to study independently and assist teachers in delivering material (Andriyani et al., 2021; Nanda et al., 2017; Windrayanti et al., 2022). The development of learning videos assisted by the Powtoon application is very valid and has received positive responses to be used as learning media (Apriliani et al., 2021; Asih et al., 2021; Awalia et al., 2019). Based on these relevant studies, interactive learning videos positively impact distance learning. The students responded positively and had satisfaction while learning using interactive learning videos. Based on the questionnaire answers (google form) from Package B Program students, positive response data were obtained regarding the experience of using interactive videos during distance learning in the form of video learning media (such as Youtube) which helped the most during distance learning.

#### 4. CONCLUSION

Interactive learning videos can overcome the various limitations of experience that package B program students have. Interactive learning videos can be used for almost all topics, types of learning, and every domain starting from cognitive, affective, and psychomotor, positively impacting the learning process.

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