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Developing a character-education-based interactive video for enhancing students' conceptual understanding in Biology

Nurin Afrina[1], Miza Nina Adlini[2]
[1,2] Universitas Islam Negeri Sumatera Utara, Kota Medan, Indonesia
nurinafrina@uinsu.ac.id[1], mizaninaadlini@uinsu.ac.id[2]

ABSTRACT

Students' low conceptual understanding of Biology learning is often attributed to the dominance of conventional methods that are monotonous and less engaging, resulting in low motivation. This study aimed to develop a character-education-based interactive video on the human digestive system for eleventh-grade high school students using Canva. The research employed a Research and Development (RnD) approach with the ADDIE model, comprising Analyze, Design, Develop, Implement, and Evaluate stages. The product was tested on 30 students from a Madrasah Aliyah Negeri (MAN) in Medan. Instruments included expert validation sheets for content and media, teacher and student response questionnaires, and conceptual understanding tests. Data were analyzed using descriptive quantitative methods through validity, practicality, and effectiveness tests with the N-Gain calculation. The results indicated that the developed media was highly valid based on expert assessment, highly practical according to teacher and student responses, and effective in improving conceptual understanding with a high N-Gain category. The implication of this study is that character-education-based interactive video has the potential to be applied in Biology learning to reinforce positive character values among students.

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ABSTRAK

Rendahnya pemahaman konsep peserta didik dalam pembelajaran Biologi sering disebabkan oleh penggunaan metode konvensional yang monoton dan kurang bervariasi sehingga membuat peserta didik kurang termotivasi. Penelitian ini bertujuan untuk mengembangkan media pembelajaran berupa video interaktif berbasis pendidikan karakter pada materi Sistem Pencernaan manusia untuk peserta didik kelas XI SMA dengan memanfaatkan aplikasi Canva. Penelitian menggunakan pendekatan Research and Development (RnD) dengan model ADDIE yang mencakup tahap Analyze, Design, Develop, Implement, dan Evaluate. Uji coba dilakukan pada 30 peserta didik di salah satu Madrasah Aliyah Negeri (MAN) di Medan. Instrumen penelitian meliputi lembar validasi ahli materi dan media, angket respons guru dan peserta didik, serta tes pemahaman konsep. Data dianalisis secara deskriptif kuantitatif melalui uji kevalidan, kepraktisan, dan efektivitas menggunakan N-Gain. Hasil penelitian menunjukkan bahwa media yang dikembangkan sangat valid berdasarkan penilaian ahli, sangat praktis berdasarkan respons guru dan peserta didik, serta efektif meningkatkan pemahaman konsep dengan kategori N-Gain tinggi. Implikasi dari penelitian ini adalah video interaktif berbasis pendidikan karakter berpotensi digunakan dalam pembelajaran Biologi untuk mendukung penguatan nilai-nilai karakter positif pada peserta didik.

Kata Kunci: *Canva; media pembelajaran; pendidikan karakter; sistem pencernaan; video interaktif*

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INTRODUCTION

Biology learning involves the study of organisms and their habitats, which contain data that must be understood and evaluated in the form of knowledge or processes that can be applied in daily life. This reality places Biology as a complex science that requires high-level thinking. (Azizah & Alberida, 2021). Moreover, Biology is a field that requires extensive memorization, making learning challenging. To study it effectively, a deep understanding of concepts is needed so that students not only know scientific facts but also understand the abstract objects that appear in Biology lessons. This necessity creates a considerable challenge for students when learning Biology, which is considered to have various complex concepts and terms, thus requiring an appropriate learning approach to help students understand the concepts in Biology. (Aisyiyah & Amrizal, 2020).

Understanding concepts is very important for learning because the process of understanding them can help learners explain structures or processes clearly, underscoring the need for an appropriate learning process. Problems in understanding concepts, especially in Biology learning, are caused by various factors, including a less interesting learning process and the use of traditional teaching methods. Traditional teaching is considered ineffective in the learning process, slowing learners' thinking and comprehension. (Jafar, 2021; Melisa & Susanti, 2025). Students' slow thinking ability is also caused by uninteresting learning methods and conceptual errors in the textbooks or learning materials used, making it necessary to optimize the learning process. (Pramana *et al*., 2020). In today's digital age, the use of technology-based learning tools has become something that can support student transformation, for example, through educational videos. Educational videos feature audio and visuals that can engage students in the Material presented by the teacher, keeping them focused and active in the classroom (Zai *et al*., 2024).

Innovation in teaching through videos is considered capable of conveying a variety of information to students by creating a diverse learning environment, making the learning process more efficient. (Khairini & Yogica, 2021; Hasibuan & Anas, 2025). Previous studies show that interactive videos created with the Canva application demonstrate their advantages, but their effectiveness in fostering character education remains rarely the focus of research. For example, earlier research using Canva-based interactive videos supported by Animaker on excretory system material was found to be effective and to improve students' learning outcomes (Anggriani *et al*., 2022). Other research using interactive videos created in Canva for mathematics materials found that they improve students' numeracy (Rahmawati & Nurafni, 2024). Until now, research and development of interactive videos using the Canva application in respiratory system materials has not been conducted. In addition, its use has been limited to improving students' learning outcomes and understanding without incorporating elements of character education.

The gap highlights the need for research to develop interactive videos focused on character education, using Canva for materials on the digestive system. This study was conducted to develop interactive videos on character education about the digestive system for 11th-grade MA students using the Canva application, and to determine their effectiveness in improving students' understanding of human digestive system concepts. The theoretical benefits of the Research are to enrich knowledge about technology-based learning media, particularly the use of Canva in developing students' character education. Meanwhile, the practical benefits include helping teachers improve their conceptual understanding through the interactive videos. The implications of this Research are expected to be a medium that motivates students to learn by fostering character values through character education tailored to students' needs

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LITERATURE REVIEW

Interactive video

One video that can be used in the teaching and learning process is an interactive video (Desai & Kulkarni, 2022). Interactive video is a type of learning media that combines interactive video elements, allowing learners to interact with the content presented (Suseno *et al*., 2020). Interactive videos can increase learner participation and help them better understand the Material being taught. (Saputra *et al*., 2025; Zulfa & Prastowo 2023). In the field of Biology education, interactive videos can be used to illustrate digestive system processes in a more engaging, easily understandable way. These interactive videos can be created using the Canva application, which offers various templates and design elements that make it easier for users to create appealing content without requiring advanced design skills (Yuliana *et al*., 2023). The use of Canva in education is crucial because it can simplify the process for teachers to create more attractive teaching materials, thereby fostering students' interest in understanding Biology learning concepts (Kurniawan, 2020). The use of the Canva application as an interactive learning medium can enhance positive engagement and positively motivate students. (Rais & Zulfa, 2024).

Character Education

The application of technology that facilitates many individuals, especially students, in the learning process not only provides positive outcomes for life but also causes detrimental effects. Technology offers both positive and negative aspects that anyone, especially students, can access (Syahputra *et al*., 2023). Character education is necessary to counter the negative effects of technology. Character education is an essential element in the education system aimed at building children's character and ethics (Iksal *et al*., 2024). Character education is becoming increasingly vital to balance the negative influences that may arise from unlimited access to information, so that students remain ethical even when using technology. (Dewi *et al*., 2023). Character education requires consistent habits and examples that bridge the learning from school and everyday life, so that it does not cause confusion for students. This makes it necessary to develop character education in the learning environment, especially in those related to technology (Ardiyanti & Khairiah, 2021).

Digestive system

The use of interactive videos through the Canva application as a character education-based teaching medium can be applied in teaching Biology on the topic of the digestive system. The digestive system is an important topic in the Biology curriculum for 11th-grade high school students. The digestive system is included in subjects that are complex in terms of processes and visuals because it is located inside the body, making it difficult for students to imagine how it works; hence, the need for interactive videos (Anjarwati *et al*., 2022; Sari & Bintang, 2022). Through interactive videos, students are expected to gain a strong understanding of the digestive system, which is important not only for academic purposes but also for daily life, such as understanding health and proper eating habits (Ikhtiara *et al*., 2022).

METHODS

This study applies an R&D (Research & Development) approach by adopting the ADDIE development model, which consists of five stages: Analyze, Design, Develop, Implement, and Evaluate, as shown in **Figure 1**. The subjects of this study consist of 30 eleventh-grade students at MAN 3 Medan. The tools used in this study are interview guidelines for teachers and questionnaires for students, which are used to collect information regarding the challenges and needs for interactive learning media. In addition, the

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validity of interactive videos focusing on character education is evaluated using a validation sheet that includes assessments from media experts as well as assessments from content experts, which are used to collect reviews of the learning media from the evaluators. Then, a practicality sheet is used to assess teachers' and students' responses to the developed media. Finally, a test sheet is used to examine the effectiveness of the media in the form of a pre-test and post-test containing 7 essay questions.

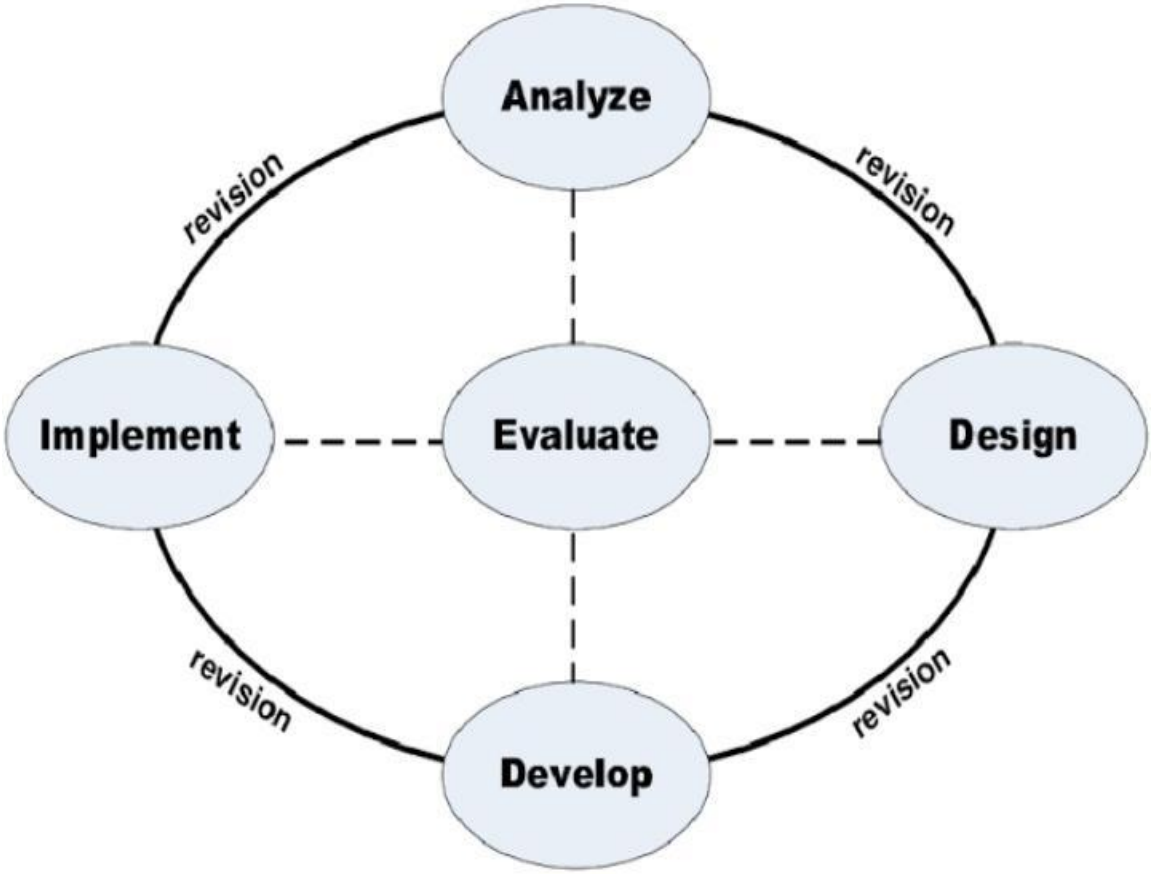

Figure 1. ADDIE Development Research Flow
Source: Branch & Varank (2009) in *"Instructional Design: The ADDIE Approach"*

At the beginning of the ADDIE development Research (see **Figure 1**), the Analyze stage was conducted to assess students' needs for the product and to evaluate the feasibility of the product requirements, which would serve as the basis for the next steps in product development. Data was obtained through interviews with teachers and questionnaires given to students, which would be analyzed to determine the extent of the difficulties students face during Biology lessons, particularly on the Digestive System Material, and the degree of need for the media to be provided, so that the media produced could be tailored to the needs of the students and the school. After conducting interviews, problems were identified among students regarding learning methods, the relevance of learning, the use of limited media, difficulties students face in the classroom, and the characteristics of students. The data obtained was then analyzed descriptively to obtain an analysis result as a basis for developing learning media design in the next stage.

The second stage is Design, which involves designing interactive videos tailored to learners' needs based on the analysis conducted and creating media designs (storyboards) using the Canva application. The learning media designed are expected to meet the needs and align with the learning objectives. The third stage is Develop, which involves developing media in the form of interactive videos in Canva, with validation testing by expert validators using validation sheets, and practicality testing through response questionnaires given to students and teachers. The validation data from the expert team will be analyzed

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using assessment criteria based on scores. There are statements that measure positive and negative scales, with questions scored 4, 3, 2, and 1. Then, the data are calculated using the validity percentage formula, and the analysis results are adjusted according to the validity and practicality criteria, yielding validation and practicality data. The following are the percentages calculated using the validity formula

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$$P = \frac{Xi}{Xy} \times 100$$

Description :
P : percentage
Xi : total number of validation scores
Xy : highest score

For the validity criteria of the media and materials used to measure the feasibility of the media and materials, a percentage ranging from 0% to 100% is used, with five criteria from very invalid to very valid. A percentage range of 0% - 39% falls into the very invalid category, 40% - 55% falls into the invalid category, 56% - 75% falls into the valid category, and 76% - 100% falls into the very valid category. The determination of validity criteria for media and materials based on these percentages will indicate whether the interactive video media and materials on character education are valid and feasible for field testing. The practicality assessment criterion was carried out to determine the ease of use of the character education-based interactive video. The percentage ranges from 0% to 100% with five criteria, ranging from very impractical to very practical. A percentage range of 0% - 39% falls into the very impractical category, 40% - 55% falls into the impractical category, 56% - 75% falls into the practical category, and finally, 76% - 100% falls into the very practical category. (Rahmawati & Nurafni, 2024).

The fourth stage is Implement, which involves implementing the validated learning media that are practical, as assessed by the validator, for students. The final stage is Evaluate, to determine the extent of the product's success and make necessary improvements. In this case, students are given pre-tests and post-tests in the form of essay questions to assess the success of the learning media creation. The effectiveness of the interactive video on character education is determined by students' conceptual understanding, as assessed through pre- and post-tests. The pre-test and post-test questions consist of seven items based on Anderson's concept understanding indicators in the "*Kerangka Landasan untuk Pembelajaran, Pengajaran, dan Assesmen*" (Revised Bloom's Taxonomy). These questions have undergone a validity test to ensure they are appropriate and aligned with the Material presented in interactive character education videos on the human digestive system, developed in the Canva application. Then, an N-Gain test was conducted to determine the effectiveness of interactive character education videos, with effectiveness criteria classified into high, medium, and low ranges, as shown in **Table 1**.

Table 1. *N-Gain Criteria*

No	Score percentage	Criteria
1	g > 0.7	Tinggi
2	0.3 ≤ g ≤ 0.7	Sedang
3	g > 0.3	Rendah

Source: 2025 Research

The N-Gain calculation results will be obtained from the percentage of the pre-test and post-test scores of the students and adjusted according to the practicality assessment criteria. These results will indicate the effectiveness of the interactive video on students' understanding based on Anderson's (2001) indicators

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in the "*Kerangka Landasan untuk Pembelajaran, Pengajaran, dan Assessmen*" (Revised Bloom's Taxonomy). Then a calculation is carried out on the achievement of concept-understanding indicators to assess students' strengths in the learning process, starting with interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining. This is necessary to observe students' responses at each level of learning, so the teacher can make corrections and improvements to the indicators assessed as weak for students to work on. After corrections and improvements are made, it is expected that the teacher will find it easier to achieve the concept understanding indicators, and the students will find it easier to grasp the learning Material in class.

RESULTS AND DISCUSSION

The use of the Canva application in the learning process is considered a new innovation in education, especially in technology-based education. Canva is believed to support students' learning, particularly in understanding difficult-to-grasp Biology concepts, such as the digestive system. Furthermore, this innovation was developed as interactive videos, with character education added to instill ethics and morals in students so they can apply them in daily life. Then, validity testing, practical testing (teacher and student questionnaires), and effectiveness testing (pre-test and post-test) were conducted. After all tests were carried out, they were calculated and analyzed according to the criteria of each test in the field.

Analyze Stage

The analysis stage begins with conducting interviews with teachers and distributing student needs questionnaires. These interviews are conducted to examine background, learning styles, and the media used during the learning process. After the interviews were conducted, several problems were identified among the students, including the frequent use of lectures in Biology lessons, especially on the digestive system Material, which has quite complex concepts, leading to student boredom; the lack of connection between the Material and everyday life; limited variety in the media used, making it difficult for students to understand the lessons, particularly on the digestive system; students' limited understanding of Biology lessons when it comes to memorization and summarizing, causing students to rarely be active in class; and students' character traits such as not using break time effectively and consuming unhealthy food at school. The results of observations on the school curriculum, the number of students, and the availability of school facilities to support the teaching and learning process indicate that the school is still using the 2013 Curriculum (K13) and is transitioning to the Merdeka Curriculum. The number of students is sufficient for a class, and the school has a projector, although not many. This hinders the use of media in the learning process because it has to be shared with others.

Design Stage

After understanding the problems and the actions needed to motivate students in the learning process, a learning strategy is determined by selecting a learning method through discussion, using media in the form of interactive educational character-based videos created with the Canva application. Then, the media content is prepared, including Core Competencies (KI) and Basic Competencies (KD), learning objectives, the Material to be used, and the video production plan. The use of Core Competencies (KI) 3 and 4 and Basic Competencies (KD) 3.7 and 4.7 on the digestive system aims to enable students to interpret, analyze relationships, classify, summarize, and connect everything related to the digestive system in everyday life. Then, a match was made between character education and video creation, focusing on being religious,

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disciplined, and responsible, as a motivation for students in the learning process. Next, the video was designed using the Canva application by inserting concept understanding indicators that would be adjusted to the content of the video and questions that would be related to the questions.

Figure 2. Interactive Video Display Based on Character Education
Source: 2025 Research

Figure 2 shows the front view of the video, which is 09:53 minutes long and covers topics related to life, character education, and quizzes on the digestive system. The interactive aspects of the video are used in several materials, including the digestive process, the mouth, the esophagus, and others, encouraging students to focus on answering the questions presented in the video. The questions in the video will cover each topic discussed.

Develop Stage

After designing the video, validation was carried out on the video to be used in the form of a validation test by media experts and material experts. Then, calculations were performed on the results of the validation test, and it was found to be in the very valid category.

Table 2. validity test results

No	Validator	Instrument score	Persentage	Criteria
1	Media expert	40/40	100 %	Very Valid
2	Subject matter experti	73/80	98,75 %	Very Valid

Source: 2025 Research

Based on **Table 2**, it can be seen that the media and content applied in learning, in the form of interactive videos focusing on character education in the human digestive system Material, are deemed feasible to be tested on eleventh-grade science students (XI MIPA 2) at MAN 3 Medan. These education-based

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interactive videos have received validation from media and Material experts who provided feedback and suggestions before the field trial, to ensure that the teaching media, in the form of interactive videos oriented towards character education in the human digestive system Material, can be implemented. Based on the results of the media test analysis, the instrument score reached the maximum of 40 (100%), indicating it is very valid. Next, based on the results of the Material test analysis, the instrument score was 73 out of 80, corresponding to 98.75%, indicating it is highly valid and that the media is feasible for a feasibility test in schools.

Furthermore, in the practicality test conducted by distributing response questionnaires to teachers and students to examine the ease of use of the product by teachers and students, the analysis results showed that the teaching media in the form of an interactive video based on character education on the human digestive system, material through the Canva application, is very practical to use in classroom learning.

Table 3. Practicality Test Results

No	Respondent	Instrumen Score	Persentage	Criteria
1	Guru	39/44	88,63 %	Very Valid
2	Peserta didik	66/72	92,15 %	Very practical

Source: 2025 Research

Based on the practicality test results in **Table 3**, it shows that teachers' responses regarding the interactive video focused on character education for the human digestive system Material indicate that the video meets the validity criteria and is feasible to use in the learning process, with a percentage reaching 88.63%, which falls into the very valid category. This percentage indicates that the character education-based interactive video on the human digestive system Material can be reused for subsequent learning and can meet the learning criteria. Next, a questionnaire was distributed to students to assess their responses to an interactive video focused on character education about the human digestive system. This material was presented so students could provide feedback on the interactive character education video on the human digestive system to improve the effectiveness of the classroom learning process. The questionnaire was given to 10 class representatives to complete the assessment, resulting in 92.15% categorized as very practical. The percentage indicates that the interactive character education video on the human digestive system is easy to use, understand, and learn from, supporting sustainable learning and thereby enhancing students' conceptual understanding of the Material..

Implementation Stage

Then, students will be asked to pay attention to the video because it contains questions that can be answered by the students while also encouraging them to be active and focused in learning. The video has a duration of 09:53 minutes. It includes core competencies and basic competencies, learning objectives, an explanation of the digestive system, its relation to everyday events such as choking and gastritis, as well as a quiz that students can answer. Then, students will be asked to pay attention to the video, which contains questions they can answer while also encouraging them to be active and focused in their learning. The video is 09:53 minutes long. It includes core competencies and basic competencies, learning objectives, an explanation of the digestive system and its relation to everyday events such as choking and gastritis, and a quiz for students

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a) Tampilan pengantar video b) Tampilan tujuan pembelajaran c) Tampilan materi Sistem Pencernaan

d) Tampilan topik kehidupan e) Tampilan pendidikan karakter f) Tampilan kuis video

Figure 3. Interactive Video Content Display Based on Character Education on Human Digestive System Material
Source: 2025 Research

Based on **Figure 3**, the interactive video on character education about the digestive system features interesting characters and animations. This type of video display will help students focus on learning more about the human digestive system. In addition to making the learning environment more engaging, students can access the interactive video at home to review the Material and expand their knowledge of the human digestive system, as the Material connects to everyday life. Furthermore, students can also take self-quizzes to enhance their memory of the human digestive system.

Evaluate Stage

The final stage is an evaluation that helps correct mistakes or failures in the media or in the teaching style. At this stage, a pre-test and post-test are conducted to examine the impact or effectiveness of the teaching media on student changes. This testing is carried out using an effectiveness test, which will be calculated using the N-Gain test to determine the product's level of success. The following are the results of the product effectiveness testing.

Table 4. Product Effectiveness Test Results

Pre-test Score	Post-test Score	Persentage	N-Gain Score	Criteria
20,86667	68	60,44594553	0,604459455	Moderate

Source: 2025 Research

It can be seen that **Table 4** shows that the post-test scores experienced quite significant changes, as indicated by the percentage result of 68% with an N-Gain score of 60.44%, which shows that the teaching media in the form of interactive videos based on character education on the human digestive system Material is considered quite practical and, according to the N-Gain criteria with a score of 0.60, falls into the moderate category. Based on the results of the concept understanding test conducted through pre-tests and post-tests given to 11th-grade science class 2 students on the digestive system Material, an

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overview of the achievement of each concept understanding indicator according to Anderson (2001) in "A Foundation Framework for Learning, Teaching, and Assessment (Revised Bloom's Taxonomy)" can be seen in the following graph.

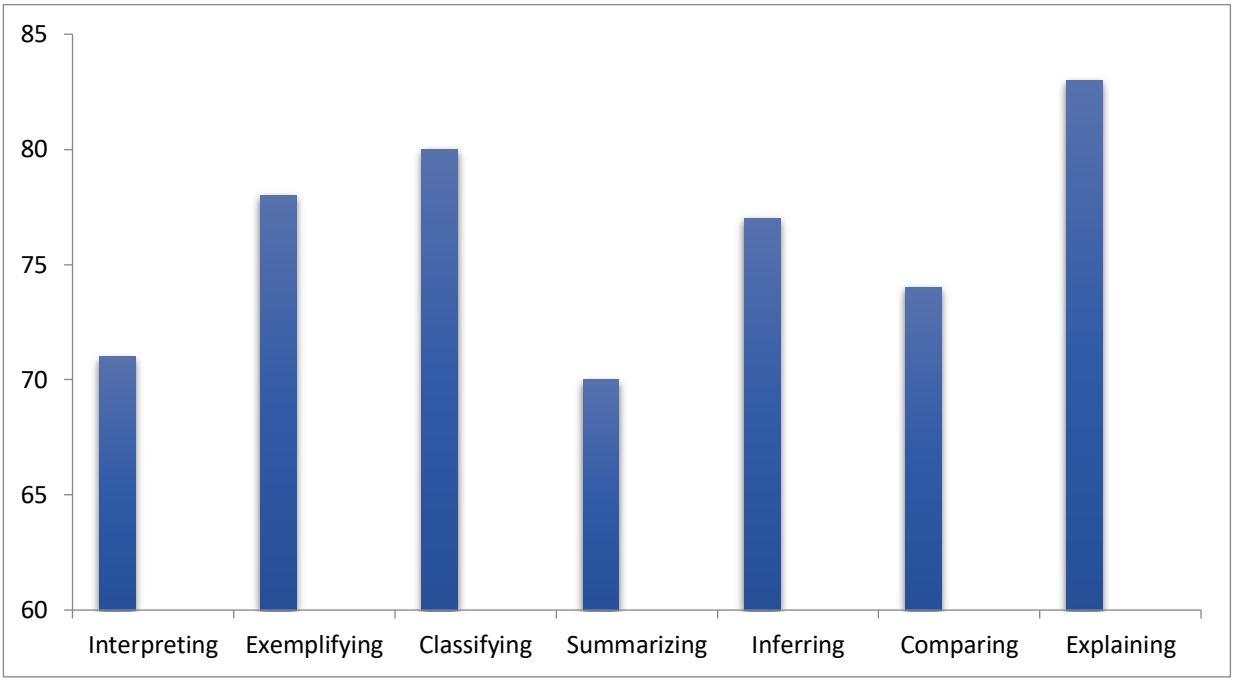

Figure 4. Test Results Chart for Concept Understanding Indicator
Source: 2025 Research

Based on **Figure 4,** students' understanding of the digestive system material achieved an average indicator score of 76%, with a good category. The indicator with the highest achievement was Explaining at 83%, indicating that most students can provide examples of applying the concept of the digestive system in daily life, such as healthy lifestyle habits that can help prevent stomach ulcers. Conversely, the indicator with the lowest achievement was Summarizing at 70%, which indicates that students still have difficulty summarizing a given text about the process of food being transformed into feces. Students' achievement on this indicator supports the ability to think creatively and critically (Ahyana & Syahri, 2021).

Discussion

Based on the results presented, it can be concluded that interactive video learning media focusing on character education related to the human digestive system, using the Canva application, is suitable for classroom learning activities. This can be proven through three tests carried out, namely validity testing (media and Material validity), practicality testing (teacher and student response questionnaires), and effectiveness testing (pre-test and post-test). In the media validity test, it achieved 100% validity in the very valid category, making it feasible to use and allowing the media to be reused as a sustainable learning tool, so that teachers can use it in subsequent lessons. Next, the Material validity test achieved a 98.75% score, indicating high validity and meeting the standards for learning materials on the human digestive system. The interactive video on character education and the digestive system aligns with the Core Competencies (KI) and Basic Competencies (KD) and with the available textbooks. Furthermore, in the practicality test, questionnaires were given in the form of teacher and student response questionnaires. These response questionnaires indicate the ease of using the media in the learning process..

Based on the teacher response questionnaire, a 88.63% valid response was obtained, indicating that interactive video media on character education is appropriate for the digestive system sequence and that

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the media used is easy to use and practical for the next learning session. Meanwhile, in the student response questionnaire, 92.15% was obtained, indicating ease of use, an easy-to-understand language, and engaging content, so it can be revisited for the learning process. Research shows that the practicality of interactive videos in field observation received positive responses, with a very good category, and that students responded positively, with a very good category. It was concluded that interactive videos are easy to use and can enhance students' conceptual understanding (Handayani *et al*., 2021; Nur *et al*., 2024). Furthermore, supported by other Research showing that interactive videos receive positive responses from both students and teachers, it can be concluded that interactive videos are a technology-based learning media innovation that can improve student learning outcomes (Fajriah *et al*., 2021; Wedyawati *et al*., 2024).

Then, in the effectiveness test, a pre-test was conducted, a test given before the teaching media were provided, to determine students' knowledge of the human digestive system through essay questions. This test was administered before the teaching media were given to the students. It can be seen that the pre-test percentage was only 20.86%, and after the teaching media and learning were provided using the discussion method, there was a significant increase in the post-test results, reaching a percentage of 68%. Then, calculations using N-Gain showed a percentage of 60.44%, which falls into the fairly practical category, and an N-Gain score of 0.60, categorized as moderate. Looking at the percentage changes in the pre-test and post-test results, it can be concluded that teaching media in the form of interactive videos based on character education can have a fairly good impact on improving students' conceptual understanding of the digestive system Material, and the use of teaching media in the form of interactive videos based on character education can enhance students' learning outcomes. This is similar to previous findings that Canva can improve students' understanding, which, in turn, affects their learning outcomes and the completeness of their learning (Anggriani *et al*., 2022; Rahmawati & Nurafni, 2024).

Based on **Figure 4**, the achievement of the Anderson concept understanding indicators for the digestive system Material is high. Explaining has the highest percentage, and Summarizing has the lowest. Explaining has a 83% success rate, indicating that students can explain the connection between the digestive system and daily life, such as stomach ulcers. Meanwhile, Classifying has a percentage of 80%, Exemplifying has a percentage of 78%, and Inferring has a percentage of 77%, which are quite good. This percentage shows that students are still able to classify the organs of the digestive system, provide examples of enzymes found in the stomach, and draw inferences from a story text about a choking incident. On the other hand, the summary score is 70%, indicating that students still have difficulty summarizing a given text on the process of food turning into feces. Meanwhile, comparing with a 74% and interpreting with a 71% can be considered fairly good, although still under teacher supervision.

Based on the data, students are not very good at distinguishing between someone who is late eating and a healthy person, and they are not yet able to correctly identify the digestive organs and their functions. Overall, the data show that students perform better on indicators related to real-life applications, such as Explaining and Classifying, than on indicators that require abstract thinking, such as Summarizing and Interpreting. Therefore, teachers need to pay more attention to learning that involves abstract thinking by providing simple activities, such as summarizing or drawing conclusions about the human digestive system. These difficulties are also evident in previous Research, which shows that students face several challenges in understanding and learning chemistry lessons, particularly in abstract learning (Priliyanti *et al*., 2021). Teachers need special skills to explain chemistry lessons so students can understand the Material. Previous Research shows that addressing students' learning difficulties involves mental sharpening, which can develop their higher-order thinking skills so they can present their arguments through discussion activities (Karlina & Alberida, 2021).

This can encourage students to reflect on their opinions, helping them become accustomed to expressing their thoughts and conclusions throughout the learning process. The use of interactive multimedia

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developed through Canva for human digestive system Material can increase students' motivation to learn. This study is supported by previous Research indicating that the use of Capera interactive learning media on Canva can improve students' learning performance (Ifadah & Bektiningsih, 2025). Therefore, interactive videos created in Canva can improve students' learning outcomes by enhancing their motivation and learning performance. The improvement in students' conceptual understanding shows that teaching media in the form of interactive videos focused on character education can engage students and motivate them to learn about the human digestive system. Moreover, the addition of character education to the teaching media, such as interactive videos, can encourage students to explore the digestive system and its real-life applications. The limitation of this study is that it only measures the effectiveness on students' conceptual understanding, but does not measure students' character education.

CONCLUSION

Based on the Research results, the development of interactive video-based teaching media has been proven valid and practical for science learning. In addition, character education-based interactive videos on the human digestive system Material can improve students' conceptual understanding. This improvement is evident in the post-test results, with a 68% score and an N-Gain of 0.60, categorized as practical and moderate. This improvement occurs because students are motivated by the learning they are engaged in. Character education-based interactive videos on the human digestive system Material contain character values related to everyday life, making learning not seem boring and easy to understand through the interactive effects displayed in the video. Character education presented in the video, such as religious values, discipline, and responsibility, can encourage students to become more ethical individuals in today's technology era. It is suggested that future Research can explore character education values beyond religiosity, discipline, and responsibility to provide more variation in the character education used. Then, interactive videos on Canva should be used online because offline use makes it difficult to highlight their interactive elements. If one wants to add interactivity to the video, researchers can use the Canva online application or another application. Researchers can also address topics related to daily life, especially in relation to the digestive system Material.

AUTHOR'S NOTE

The author states that there is no conflict of interest related to the publication of this article. The author emphasizes that the data and content of the article are free from plagiarism.

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