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Development of a High School Static Fluid Learning Video Based on Contextual Wetlands

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Abstract: This research aims to develop static fluid learning videos based on contextual wetland areas that are valid and practical. Learning videos were developed using R&D research design with the Rowntree development model, which consists of planning, development and evaluation stages. The evaluation stage in this research uses Tessmer formative evaluation only for the small group evaluation stage. Research data was collected through walkthroughs and questionnaires. Walkthrough data analysis uses the Aiken V Index, and the average percentage of questionnaire data is then converted to obtain conclusions about the validity and practicality of the video being developed. The results of the research concluded that the static fluid learning video for class included in the very high validity category. The percentage was 83.92% at the one-to-one evaluation stage and 81.50% at the small group evaluation stage, categorized as practical. These results indicate that the development of contextual wetland area-based high school static fluid learning videos is feasible for learning Wetland Environmental Physics.

Keywords: Contextual learning; Learning videos; Rowntree development model; Wetland environment

Introduction

Currently, the world is in the era of the industrial revolution 4.0. To answer the challenges of the industrial revolution 4.0 in the world of education, 21st-century life skills, better known as Creativity, Critical thinking, Communication, and Collaboration, are needed (Kahar et al., 2021). The era of revolution 4.0 is marked by the advancement of the world of digital humans can quickly get information and communicate with technological sophistication (Dwiyama, 2021). In addition, in 2019, a world outbreak emerged, namely the Covid-19 pandemic. The outbreak required learning activities to be carried out online (Herliandry et al., 2020) so that the Covid-19 outbreak impacts the development of technology and requires all levels of society to keep up with technological development.

The era of revolution 4.0 and online education due to the COVID-19 outbreak led to the widespread use of technology in education. The use of educational technology in the learning process tends to lead to the use of the internet or computer networks (Prajana et al., 2020). This requires educators to be proficient in managing to learn using various online learning platforms and appropriate learning media. Using appropriate learning media in learning activities can help students understand the concept of learning objectives to be achieved. In general, the media consists of audio media (can be heard), visual media (can be seen), and audio-visual media (can be heard and seen). Audio-visual media, for example, video and television learning (Nuari et al., 2024). Video media can simultaneously display image and sound elements when communicating a message or information (Andriyani et al., 2021). Learning videos are considered

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a suitable learning media to be used in the learning process because they can present reality in the classroom (Busyaeri et al., 2016). In addition, videos can provide a new nuance with a concrete visualization of the concept and an actual display (Repelita et al., 2023). In order to convey a more explicit message from abstract material, a learning video is needed that can relate the material to the real life of students or context.

Contextual learning is a learning approach that brings the real world into the classroom, where phenomena life related to learning materials are presented in the classroom to make it easier for students to understand concepts (K. Dewi et al., 2021; Faizah et al., 2019; Febliza et al., 2021; Nanda et al., 2017; Octavyanti et al., 2021). In addition, the contextual approach emphasizes the ability of students to construct their knowledge and find out for themselves so that students can explore their thoughts in gaining the experience and knowledge they have learned (Samsudin et al., 2023). This approach emphasizes students' activeness in finding knowledge related to learning materials (Suryawati et al., 2018). Several studies reveal that the contextual learning approach can improve motivation, learning outcomes, and critical thinking skills in science with the natural sciences, social sciences, or languages (Artini et al., 2019; Wardani et al., 2020).

The implementation of contextual approach-based learning is carried out according to regional characteristics. A wetland area is one of the characteristics of an area suitable for learning physics, especially in a fluid material (Oktrisma et al., 2021; Rusmansyah et al., 2023). Wetlands are a wide range of inland, seaside, and marine habitats that share some of the same features. In addition, wetlands are defined as swamps, peatlands, and water (Reuter et al., 1992), including areas whose seawater is not more than 6 meters at low tide and is natural or artificial, permanent or temporary, fresh, brackish, or standing water containing salt or water running water (Ramsar Convention) (Anggara, 2018). The wetlands in the province of South Sumatra reach 3.04 million hectares and occupies the fifth position as the province with the largest wetland area in Indonesia. So it cannot be denied that there are many community activities, phenomena, and objects in the wetland environment around students. The actual situation in the wetland environment can be used as a source of learning physics, especially inert fluid material, through the development of contextual wetland-based teaching materials.

In developing a product as an initial step for learning media, it is necessary to conduct a needs analysis early in development research. The researcher analyzed the contextual-based static fluid learning video for eleventh graders at UPT Stage High School, Ten Ogan Ilir. The results of the needs analysis show that 54% of students are very interested in learning static fluid using learning videos, 72% of students think that learning video media is very necessary for learning activities of inert fluid materials, and 52% of students want learning videos that contain discussion of questions, equipped with examples of questions in everyday life and can be accessed anywhere and anytime.

This research develops wetland-based static fluid learning videos as a response to the industrial revolution 4.0. The novelty of this research lies in the integration of physics concepts in the context of a wetland environment that is real and relevant for middle school students. By utilizing learning video technology, this research not only increases learning accessibility but also increases students' motivation and understanding of the material, while developing an appreciation for biodiversity and environmental sustainability. This approach not only supports students' active and constructive learning, but also encourages the use of technology as an effective tool in contextual education in the future.

Research on the development of learning videos has been carried out by several researchers who produce learning videos that are efficient, valid, practical, and suitable for use (Mutia et al., 2018; Saparini et al., 2020; Suryansah et al., 2016). Another research based on contextual wetlands on the development of learning modules has been carried out with the results of validity, legibility, and effectiveness in the excellent category (Iriani et al., 2019). From this, research has been conducted on developing static fluid learning videos based on contextual wetlands to produce valid and practical learning video products.

Method

This type of research is Research and Development research using the Rowntree model, which is a product-oriented development model (Wahidah et al., 2019). Rowntree's development model has three stages: planning, development, and evaluation. At the planning stage, several steps are taken, namely needs analysis, the need for developing learning videos on static fluid material based on contextual wetland areas, and analysis of static fluid material related to wetland area phenomena to formulate learning objectives. The development phase is carried out by developing topics, developing a draft, and producing a prototype of a static fluid material learning video for the eleventh graders of high school based on contextual wetland areas. The next stage is the evaluation using Tessmer's formative evaluation model. Tessmer's formative evaluation stage is (1) self-evaluation, (2) expert review; (3) one-to-one evaluation; (4) small group evaluation; and (5) field test.

The field test stage has not been carried out in this study, so the research only reached the small group evaluation stage.

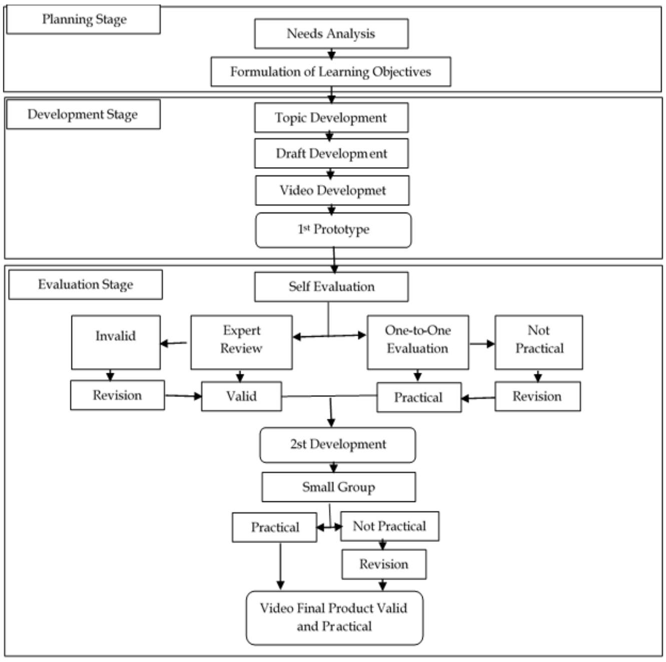


Figure 1. Rowntree model development stage diagram (Wahidah et al., 2019)

The planning and development stages are carried out at the Sriwijaya University Physics Education Study Program in the odd semester of the 2021/2022 academic year. The one-to-one and small group evaluation stages were tested in the odd semester of the 2021/2022 academic year at UPT Stage High School Ten Ogan Ilir. The subject in this study were instructional videos for the eleventh grade of high school for inert fluid materials based on contextual wetland areas. The research subjects were UPT Stage High School and Ten Ogan Ilir students at the evaluation stage.

Data collection techniques in this study used two methods: walkthroughs and questionnaires. A walkthrough will be carried out at the expert review stage for experts on the feasibility aspects of content, graphics, and presentation of learning videos. The validation grid for the feasibility aspect of content, graphics, and video presentation of static fluid learning material for high school students contextual wetland-based is presented in table 1.

The questionnaire data collection technique was carried out at the one-to-one and small group evaluation stages, aiming to know the learning videos' practicality. The number of students as respondents at the one-to-one evaluation stage was three; at the small group evaluation stage, there were nine people. The student response instrument grid is presented in table 2.

Table 1. Validation Indicators for the Feasibility of Content, Graphics, and Presentation of Learning Videos

Aspect	Rating indicator	Number of statements
Content eligibility	The suitability of the material with the related curriculum field	Three
	It contains pretty extensive information	Two
	Ease of material description to understand	Two
	Visual compatibility (text, video, graphics, images, and animations with the material)	Two
	Relation of material with contextual	Four
Graphic	Visual suitability that attracts students' interest	Three
	Appropriateness of the displayed text	Two
	Consistent animations	Two
Presentation	Visually attracts students' interest	Three
	Audio and narration aspects (prologue)	Two
	Robustness	One

Table 2. Indicators of Student Response Instruments

Aspect	Indicator	Number of statements
Theory	The concept of static fluid contained in the video	Two
	Ease of understanding the material	Two
	Clarity of video content	Two
	Ease of understanding sample questions	Two
Media	Video display design	Two
	Ease of display and color composition on the video to understand	Two
	Sound quality and use of music as a multimedia background	One

The data obtained from the walkthrough were analyzed using the Aiken V Index validation method. To see the expert agreement, the Aiken Validity Index was used, which was formulated as follows.

$$V = \frac{\Sigma s}{n\,(c-1)} \quad (1)$$

Description:
V = index of expert agreement on item content
s = the score set by the expert minus the lowest score in the category used
r = score given by expert
l_0 = lowest score in the scoring category
n = many experts
c = number of categories selected by experts

The index of expert agreement regarding the contents of item (V) obtained is then adjusted to the criteria for interpretation of the validity of the test items presented in table 3.

Table 3. Interpretation Criteria for Validity of Test Item (Erfianti et al., 2019)

Validity	Category
0.80-1.00	Very high
0.60-0.80	High
0.40-0.60	Medium
0.20-0.60	Low
0.00-0.20	Very low

Furthermore, the data obtained from the responses of students in the questionnaire data collection stage one to one evaluation and small group evaluation were analyzed by determining the average percentage of student respondents. The practical category of the developed learning video products can be seen in table 4.

Table 4. Category of Results of One-to-One Evaluation and Small Group Evaluation (HEOS) (Wiyono, 2015)

Percentage	Category
86 ≤ HOES ≤ 100	Very practical
70 ≤ HOES < 86	practical
56 ≤ HOES < 70	Less practical
0 < HOES < 56	Impractical

Result and Discussion

Planning Stage

The research results at the planning stage were obtained from the needs analysis of UPT Stage High School Ten Ogan Ilir students and continued with the formulation of learning objectives.

Analysis of Students' Needs

Needs analysis carried out by distributing questionnaires at UPT UPT Stage High School Ten Ogan Ilir showed students' lack of knowledge that some phenomena of everyday life were the application of physics concepts, one of which was on static fluid material. Other results showed that students stated that they were more interested in learning using learning videos that contained a discussion of questions, equipped with examples of questions in everyday life, and could be accessed anywhere and anytime. The results of this needs analysis indicate that a more accessible, more engaging, and meaningful learning media is needed to understand physics concepts, especially on static fluid material. This encourages researchers to develop contextual-based learning videos in wetland areas so that students can know and understand the application or phenomena that occur around their living environment.

Formulation of Learning Objectives

The issue goals are established by mapping the fundamental concepts (KD), subject content, markers of competence attainment, and learning activity objectives connected with wetland regions in context. This task is performed to ensure that the curriculum stays within the KD established by the Ministry of Education and Culture.

Development Stage

The stages of developing static fluid learning video media for high school students based on contextual wetland starts from topic development, draft development, and video development so that the product will be in the form of prototype 1.

Topic Development

Following the creation of learning goals, a description of the content concludes the subject development phase. Curriculum analysis was performed at this step of establishing learning goals by assessing content competencies (KI), essential competencies (KD), and indicators and adjusting learning objectives for high school students' static fluid materials depending on contextual wetland regions.

Draft Development

The draft development stage is carried out by making an outline of the media content and continuing to make a storyboard. The outline of the media content is made as a guide in developing learning videos. The outline of the media content is done by adjusting the appropriate media to the curriculum analysis made in the previous stage. An outline view of media content is shown in table 5.

Next is the making of learning video media storyboards. The video media storyboard is a picture or illustration of the form and presentation in a learning video that is adjusted to the outline of the media content. The storyboard that has been made consists of a video description, video visualization, nasal, duration, and background sound for the learning video. In addition, at this stage, the preparation of a learning video script or script is carried out. Preparing the static fluid learning video script for high school students based on contextual wetland areas is expected to get a simple but informative storyline. This is adjusted to the learning objectives, the outline of media content, and storyboards that have been developed previously.

Table 5. Media Content Outline

Subject matter	Indicator	Media
Static fluid	Explain the concept of static fluid	Text, video, animation, and narration
	Give examples of static fluid in everyday life	Video and narration
Density	Review the concept of density	Text, video, animation, and narration
Hydrostatic pressure	Explain the concept of hydrostatic pressure	Text, video, animation, and narration
	Explain the concept of hydrostatic pressure in a dam	Text, video, and narration
	Calculating hydrostatic pressure	Text and video
	Give an example of the application of a hydrostatic press	Text, video, animation, and narration
	Provides a virtual simulation of hydrostatic pressure laboratory	Text, video, animation, and narration
Pascal's law	Explain the working principle of Pascal's Law on a hydraulic jack	Text, video, and narration
	Explain the concept of Pascal's Law	Text, video, and narration
	Calculate the force required to lift an object in a hydraulic jack	Text and video
	Give an example of the implementation of Pascal's Law	Text, video, animation, and narration
	Provide a virtual simulation of Pascal's Law Laboratory	Text, simulation videos, and narration
Archimedes' law	Explain the concept of Archimedes' Law	Text, video, and narration
	Calculating buoyancy	Text and video
	Describe the state of an object in a fluid	Text, video, animation, and narration
	Give an example of the implementation of each	Text, video, and narration
	Give an example of the application of Archimedes's Law	Text, video, and narration
	Provides a virtual simulation of Archimedes' Law laboratory	Text, simulation videos, and narration
Surface tension	Explain the concept of surface tension	Text, video, and narration
	Explain how surface tension occurs in fluids	Text, video, animation, and narration
	Provide the implementation of surface tension in daily life	Text, videos, illustrations, and narration
Capillary symptoms	Explain the concept of the phenomenon of capillarity	Text, video, and narration
	Explain the use of capillary phenomena in daily life	Text, videos, illustrations, and narration
Viscosity	Explain the concept of viscosity in Stokes' Law	Text, video, and narration
	Provides the implementation of viscosity in daily life	Text, videos, illustrations, and narration

Video Development

The research continued with video development, and the first step was collecting visual and audio material. Then proceed with animation and video editing with the researcher's chosen software.

The collection of learning visual video material begins with the selection of a camera device. The cameras chosen to develop this video media are the DJI Mavic Pro Drone and the Nikon 5200 type DSLR camera. Using these two cameras is to get high-quality images with sharp focus resolution.

Furthermore, wetland visual material was collected by selecting a location and taking pictures and videos in the Ogan Ilir wetland area. The selection of this location is based on the location of the student's residence, which is adjusted to the characteristics of the environment. In addition, visual images of the presenters in the video were taken and carried out in a closed room with stable lighting. One example of taking pictures and videos of wetland-based static fluid learning for high school students can be seen in Figure 2.

Figure 2. Image and video capture process

The collection of audio material is done by recording a dubbing narration, followed by the selection of several instruments used as the background of the developed learning video. Adding an instrumental background is hoped to increase the interest and enthusiasm of students who see the eleventh-grade static fluid learning video based on contextual wetland areas.

Next is the prototype product development stage. There are several stages in the production process of prototype one, namely: (1) merging short videos, (2) making covers, animated images, and video effects, (3) synchronizing between video sections, (4) installing video transitions, (5) adding back sound video and, (6) the last process is converting video editing format to video format. At this stage, the researcher chose three software to support the display of the video: Canva, Powtoon, and Wondershare Filmora.

Canva is an online-based application that provides attractive designs in templates, features, and categories (I. M. Dewi et al., 2024). In research, Canva is used to develop engaging illustrative text and images in learning videos. With this diverse and exciting design, it is hoped that the static fluid learning video for high school students based on contextual wetland areas developed are more attractive. In this study, researchers used the Canva pro application so that the products developed were more creative. The implementation of learning video development using Canva software is shown in Figure 3.

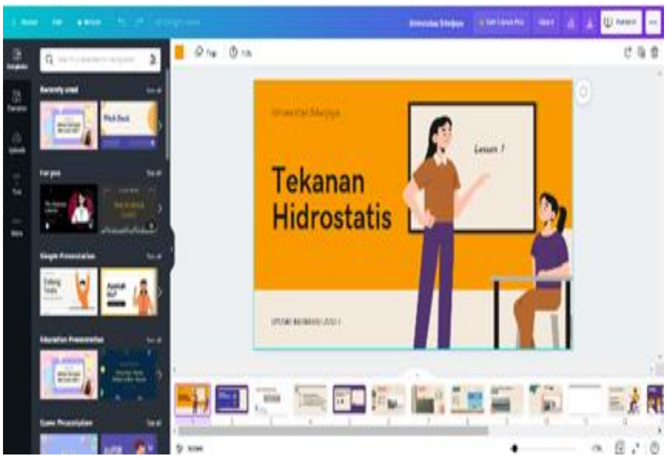


Figure 3. Using canva software in development (Hidayah et al., 2023)

Powtoon software is an IT-based web application with various animation features and effects that make videos look more attractive (Mayasari et al., 2022, & Istiqomah & Adi, 2024). In research, Powtoon provides more real animation in the display of the learning videos developed. The use of Powtoon software is presented in Figure 4.

The Wondershare Filmora app assists with starting any movie project by importing and editing videos, adding transitions and special effects, and final production on DVD, mobile devices, or the web. Wondershare Filmora software is used to correct colors and combine and edit learning videos. The process of inserting and merging videos in Wondershrase Filmora software is presented in Figure 5.

Figure 4. Animation editing process in powtoon software (A. M. Dewi et al., 2022)

Figure 5. Editing process in wondershare filmora software

Evaluation Stage

Self-Evaluation

The first stage of the evaluation stage is the self-evaluation stage. Self-evaluation is done by self-assessing and checking the prototype product 1 learning video includes all components that have been developed. If an error occurs, it is continued with revision. After completing the revision, the second evaluation stage was carried out.

Expert Review

The second evaluation stage in the study is the expert review stage which is carried out to get confirmation of the validity of the learning videos that have been developed. Expert validation was chosen because of various criticisms and inputs in developing prototype one into a video media product ready to be used in the learning of eleventh-grade high school students. This validation process is carried out by appointing two lecturers and 2 Physics subject teachers who are considered experts in content feasibility, graphics, and video presentation.

There are three main aspects in the video validation assessment, which were validated by four experts, including; the feasibility of the content of the learning video material, graphics, and presentation. The Aiken V Index indicates expert review results.

The feasibility aspect of the static fluid learning media content for high school students is based on contextual wetland areas developed with an Aiken V Index value of 0.88, categorized as very high validity. In the aspect of the feasibility of this content, there are five indicators, including; the suitability of the material with the related curriculum field, it contains fairly extensive information, ease of understanding the material description, visual suitability (text, video, graphics, etc.), images and animations with the material) and relation of the material with context. Of the five indicators in the feasibility aspect of media content, the indicator of the relevance of the material to context has the highest validation value compared to the other four indicators, with an Aiken V Index value of 1.00. The results of validating the feasibility aspect of the content of high school static fluid learning media content based on contextual wetland can be seen in table 6.

Table 6. Result of the Feasibility of the Contents of the Learning Video

Indicator	Index aiken V	Category
The suitability of the material with the related curriculum field	0.89	Very high validity
It contains pretty extensive information	0.83	Very high validity
Ease of material description to understand	0.83	Very high validity
Visual compatibility (text, video, graphics, images, and animations with the material)	0.83	Very high validity
Relation of material with contextual	1.00	Very high validity
Content feasibility component validity	0.88	Very high validity

The results of the validation of the graphic aspect of the learning video get an Aiken V Index value of 0.94 with a very high validity category. The results of the validation of the graphic aspect of this learning video can be seen in table 7. In the graphic aspect of video media, three indicators are assessed, including; visual suitability that attracts students' interest, appropriateness of the text displayed, and animation consistently displayed. Of the three indicators, the visual suitability indicator that attracts students' interest gets the lowest validation Aiken index, which is 0.83 compared to the other two indicators.

Table 7. Graphical Aspect Validation Results

Indicator	Index aiken V	Category
Visual suitability that attracts students' interest	0.83	Very high validity
Appropriateness of the displayed text	1.00	Very high validity
Consistent animations	1.00	Very high validity
Graphical component validity	0.94	Very high validity

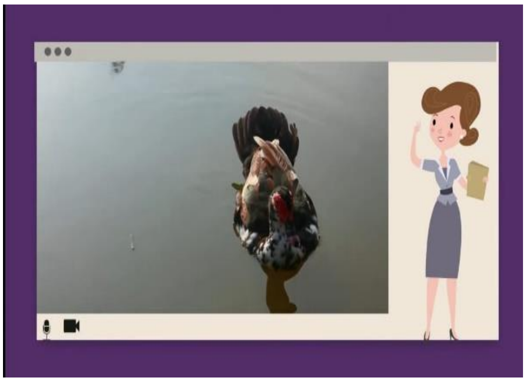
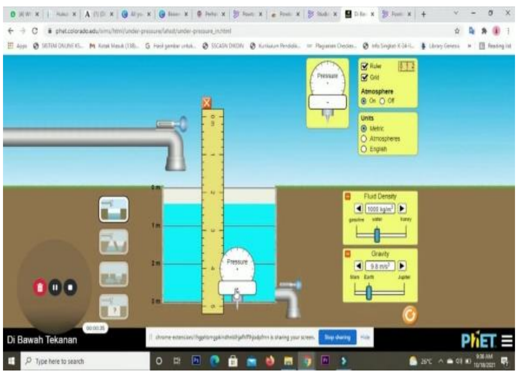
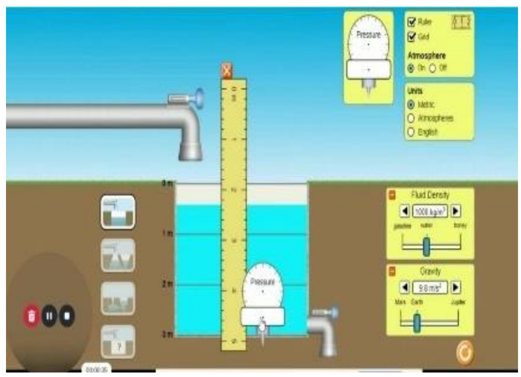
While the aspect of presenting the learning video, the results of expert validity are presented in table 8, in the aspect of a video presentation, the Aiken validity index value is 0.83 with a very high validity category. Aspects of video assessment with assessment indicators consist of; visually attracting students' interest, audio and narrative aspects (prologue), and (3) robustness.

In addition to providing an assessment, expert reviews were also asked to provide suggestions and comments related to high school static fluid learning videos based on contextually based on wetlands. Suggestions for improvement from expert reviews have been implemented and are summarized in table 9.

Table 8. Validation Results of Presentation Aspects

Indicator	Index aiken V	Category
Visually attracts students' interest	0.83	Very high validity
Audio and narration aspects (prologue)	0.67	Very high validity
Robust-ness	1.00	Very high validity
Presentation component validity	0.83	Very high validity

Table 9. First Prototype Revision

Before revision	Suggestion	After revision
	Add the title "hydrostatic pressure in subchapter 1."	
	Synchronizing sub-chapter writing in each material. As in Archime-des' Law, there is no writing.	
	The web browser in the virtual lab only displays one tab, namely, learning media.	

One-to-one Evaluation

The following evaluation stage is the one-to-one evaluation stage. The one-to-one evaluation stage involved three students from UPT Stage High School, Ten Ogan Ilir, filling out a prototype response questionnaire 1. The results of student responses to the use of the prototype one learning video at the one-to-one evaluation stage were 83.92%, so it was concluded that the video the learning developed has practical criteria. The results of the one-to-one evaluation stage are presented in table 10.

Table 10. Result of the One-to-One Evaluation Stage of Student Response Questionnaires

Indicator	Students		
	One	Two	Three
The concept of static fluid contained in the video	3.00	3.00	3.50
Ease of understanding the material	3.67	3.17	3.50
Clarity of video content	2.75	3.25	3.25
Ease of understanding sample questions	3.20	3.60	3.60
Video display design	4.00	4.00	4.00
Ease of display and color composition on the video to understand	2.33	3.33	3.33
Average			3.36
Percentage			84%
Category			Practical

Small Group Evaluation

The final evaluation stage is the small group evaluation. Small group evaluation is done by testing video learning products for small groups. Based on the research results on student responses in the small group evaluation stage, the percentage was 81.50%. So that the results of the small group evaluation are concluded into the practical category, the results of students' responses in the small group evaluation stage can be seen in table 11.

Table 11. The Results of Student Responses at the Small Group Evaluation Stage

Indicator	Students								
	A	WA	M	MA	R	KM	EPS	FN	AH
The concept of static fluid contained in the video	3.25	2.75	3.50	2.75	3.25	3.25	3.25	3.25	3.00
Ease of understanding the material	3.17	3.00	3.17	3.17	3.33	3.50	3.17	3.17	3.00
Clarity of video content	3.50	3.25	3.25	3.00	3.25	3.50	3.00	3.75	3.00
Ease of understanding sample questions	3.40	3.20	3.60	3.00	3.20	3.80	3.40	3.80	3.00
Video display design	4.00	3.00	4.00	3.00	3.00	3.00	3.00	3.00	3.00
Ease of display and color composition on the video to understand	4.00	3.33	3.67	3.00	3.33	3.67	3.33	4.00	2.00
Average									3.26
Percentage									81.50%
Category									Practical

South Indralaya District, Ogan Ilir Regency, is one of the wetland areas in the province of South Sumatra. The learning videos explain natural phenomena around students by relating them to eleven static fluid learning activities (Razak et al., 2023). One example of a natural phenomenon that utilizes the concept of static fluid in the sub-chapter of hydrostatic pressure is a dam wall in an irrigation system (Kong et al., 2024). Other phenomena in students' lives are public transportation tools such as boats, community floating bridges, hydraulic jacks, and insects that can walk and stand on the water's surface.

Dam walls in irrigation systems can explain the concept of hydrostatic pressure. The hydrostatic pressure of two or more objects at the same depth of the same magnitude is influenced by the density of the substance, depth, and acceleration of gravity (Late et al., 2017). So that when it enters a dam wall, it will be made thicker according to the concept of hydrostatic pressure, which is influenced by depth.

The daily life of the Ogan Ilir community still uses boat transportation tools in the fishing system; the community also uses bamboo structures as floating bridges. These natural phenomena are presented in learning videos as the application of the concept of Archimedes' Law. With this, students know the concept and application of the environment around students.

In addition, the phenomenon of insects that can stand and walk on water's surface is also an example of the application of static fluid in the sub-section of surface tension. The surface tension of a liquid is the tendency of the surface of a liquid to stiffen so that the surface is covered by an elastic layer (Yulianto et al., 2016). The surface tension of a liquid is related to the lines of tension on the surface of the liquid. This tension comes from the cohesive attraction of the liquid molecules.

In addition to showing and explaining the phenomena around the student's residence, the learning video also displays virtual simulations related to the material discussed and adapted to the learning objectives. Students can more easily understand static fluid material and achieve learning objectives according to the predetermined KD.

Learning videos that have been developed can be accessed anytime, anywhere, and can be played repeatedly. Students can understand static fluid material more efficiently with contextual-based learning videos in wetland areas.

Conclusion

A static fluid learning video has been successfully developed for class XI students based on contextual wetland areas, categorized as very high validity and practical. This level of validity is expressed by the value of the Aiken Validity Index (V) in the appropriateness aspect of the learning video content of 0.88, the graphic aspect of the learning video of 0.94, and the presentation aspect of the learning video of 0.83, all three aspects which are included in the very validity category tall. Meanwhile, the level of practicality is expressed in percentage, while at the one-to-one evaluation stage a percentage of 83.92% was obtained which was categorized as practical. At the small group evaluation stage, 81.50% was obtained in the practical category. It can be said that contextually based static fluid learning videos for class X high school students are worthy of use. It is hoped that the resulting product can be an additional learning resource related to inert fluid materials, especially in high schools in wetland areas. Further research is needed on other physical concepts in wetland.

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Author Contributions

Conceptualization, U. N and K. W, are responsible for formulating the ideas and concepts of this research. The research methodology was developed by U. N. Software development is carried out by U. N. Review and editing were carried out by U. N and K. W. All authors have read and agreed to the final version of the manuscript for publication. This research did not receive external funding. The authors declare that there is no relevant conflict of interest in this study.

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Conflicts of Interest

The authors declare that there is no conflict of interest in this research.

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