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Development of H5P Moodle-Based Interactive STEM-Loaded Videos to Grow Performance Skills as an Effort to Overcome Learning Loss in Electrical Measuring Materials

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Abstract: This study aims to develop an interactive STEM-based video based on H5P Moodle that is valid, practical, and effective for cultivating performance skills as an effort to overcome learning loss in the material for measuring instruments. The research method used in this development is the R & D method using the ADDIE model which consists of five development steps namely: analyze, design, development, implementation, and evaluation. The data collection instruments used include: needs analysis questionnaires, validation test questionnaires, practicality test questionnaires, and effectiveness test questionnaires. The trial design using research products shows that the H5P Moodle-based Interactive Video developed is valid, practical, effectively used in the closed-eye learning process (PTTM) through blended learning to foster performance skills as an effort to overcome learning loss. The results of the validity test obtained an average percentage of construction validity of 92.00% and content validation obtained an average percentage of 87.00%. The results of the practicality questionnaire analysis showed that the STEM-based Interactive Video based on the H5P Moodle was stated to be practical with product legibility obtaining a percentage of 96.00% in the very good category. The results of the teacher's response test using Interactive Video with STEM-based H5P Moodle obtained a percentage of 87.60% in the very good category. For student responses the percentage is 87.00%, this indicates an interactive video with STEM content based on the H5P Moodle that was developed practically. Effectiveness is shown by the results of the analysis of the average percentage of achievement of performance skills in the experimental class of 87.50 and 73.00% in the control class. An increase in performance skills of 14.50% shows that Interactive Video with STEM content based on Moodle's H5P is very effective for growing performance skills as an effort to overcome learning loss.

Keywords: H5P; Interactive videos; Learning loss; STEM; Work method

Introduction

In the 21st century everyone is required to have competencies: Critical Thinking and Problem Solving, Creativity and Innovation, Communication, and Collaboration (Gürsoy, 2021; Lestari, 2021). Skills, knowledge, and attitudes of the 21st century is needed to face all competition in the field of scientific technological progress (Khoiri et al., 2021), including performance skills. Performance skills are the ability to perform tasks and solve problems in applying learning outcomes (Stanley, 2021). To create a collaborative and interactive learning environment for students requires the development of independent learning, creative thinking, problem solving, critical thinking, communication, and collaboration skills (Albay & Eisma, 2021; González-Pérez & Ramírez-Montoya, 2022).

During the Covid-19 Pandemic era, educators found it increasingly difficult to cultivate performance

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skills due to online learning policies and PTMT (limited face-to-face meetings), where one hour of learning was provided with 30 minutes and class content was limited to 50% of class capacity. This has an impact on the existence of learning loss. Based on these problems, to overcome learning loss in learning physics, several steps must be taken by an educator, namely: 1) providing physics learning materials with easy-to-understand methods, 2) preparing interesting physics learning multimedia, 3) providing opportunities for students to study independently by providing interactive videos (Priyakanth et al., 2021). The rapid development of information technology, both software and hardware, has provided its own advantages for this video media to be used as an interactive learning medium, namely the H5P module from Moodle. To improve the learning process according to Thomas et al. (2019) video multimedia learning theory must be more interactive to encourage active processing of the information presented and include tasks related to the content presented at the end of the video and integrated by inserting tasks directly into it.

Based on pre-research with a sample of 21 physics teachers in Lampung Province, information was obtained that the videos used by teachers during PTMT mostly used linear videos for physics learning media. Then it was obtained that 86.72% of students had difficulty understanding electrical measuring instruments, especially in using and how to read measurement results and as many as 64.06% of educators did not use videos to optimize performance, 52.4% limited practicum tools, and 38.1% limitations of learning media and 52.4% lack of visual representation in learning. Based on these problems, it is necessary to develop an interactive STEM-based video based on the H5P Moodle that is valid, effective and practical to cultivate performance skills and reduce learning loss in the material of electrical measuring instruments.

The specific objective of this research is to produce learning media in the form of interactive STEM-based videos based on H5P Moodle that are valid, effective and practical for cultivating performance skills and reducing learning loss in high school students' electrical measuring instruments. Efforts to cultivate performance skills and reduce learning loss in high school students are urgently needed to provide 21st century skills and the demands of the 4.0 industrial revolution era. One of these efforts is to provide learning media in the form of interactive videos that can improve performance and reduce learning loss. Therefore it is very urgent to develop an interactive video learning media with STEM-based H5P Moodle content on electrical measuring instrument material.

Learning Video Media

Learning multimedia plays an important role for the success of the learning process. One form of multimedia is video. Apart from being attractive, the use of video media in online learning can also increase students' interest in learning (Agustini & Ngarti, 2020) and is a medium that strongly supports distance learning (distance learning), because it can be shared through video sharing sites such as YouTube, Google Drive and applications that can be accessed. via cell phones and laptops. In learning videos, the material presented is not only theory, but also concrete application of material concepts and demonstrations, (Cohen et al., 2018). Learning videos in general will work well if there is interaction between educators and students (Bétrancourt & Benetos, 2018).

Interactive Video Roles

Video learning media improves learner understanding and retention, improves learning outcomes and has great potential to facilitate blended learning (Biard et al., 2018; Desai & Kulkarni, 2022). Video has the ability to increase student involvement in the learning process thereby increasing cognitive and emotional learning outcomes (Gedera & Zalipour, 2021). A number of advantages regarding learning videos have been disclosed, but videos that are linear, one-way in nature, also have weaknesses. In this regard, several studies have been carried out. Demonstrative non-interactive videos can lead to superficial learning because students are so passive audience and it leads to a bad learning experience (Sözeri & Kert, 2021). Demonstrative videos actually create apathy among learners rather than stimulate their interest in learning, making them passive learners (Papadopoulou & Palaigeorgiou, 2016; Sinnayah et al., 2021). One of the biggest drawbacks of linear video is that it does not facilitate the interaction of learners and educators (Garber et al., 2021; Singgih, 2021).

Based on the findings regarding demonstrative videos that are linear in nature, this research will develop interactive videos using the H5P module facility provided by the Moodle LMS. Video as an effective tool in educational contexts, pedagogic design with interactive elements is critical and educators need to include such elements in videos that promote active learning (Afify, 2020). Interactive videos are known to have several advantages. In interactive videos, students become active viewers, and help involve students in active learning (Barman & Jena, 2021). Non-linear videos are interactive videos that embed interactive learning components that stimulate students' thinking and encourage independent learning (Pal et al., 2019). Interactive videos are described as one of the most

effective ways to integrate various features such as moving images, stories, and content, all of which are enriched with interactive elements (Preradovic et al., 2020). Interactive videos ensure learner engagement. participation and help students to focus fully on video content actively (Mauliana et al., 2022; Richtberg & Girwidz, 2019). Interactivity here is defined as a combination of elements that allow students to physically manipulate the platform to enhance learning activities, various interactive features i.e. embedded text, questions, prompts to generate discussion, reflective pause, feedback, video links can be included in videos to make navigation more efficient, to test learner understanding at certain points in the video as well as encourage different types of interactions (Leisner et al., 2020).

In general, there are two levels of interaction, namely: the first level of functional interactivity, specific constructive feedback is given to students' responses to certain activities then the second level of interactivity is dealt with cognitive interactivity and meta-cognitive processes to test students' understanding of certain points in the video as well as encourage various types of interactions (Kuba et al., 2021).

H5P Moodle Videos

Making interactive videos for blending learning to be interactive is to use H5P. H5P is a free and open-source content collaboration framework based on Java Script (Singleton & Charlton, 2020). H5P stands for HTML5 Package and aims to make it easier for everyone to create, share, and reuse interactive HTML5 content such as videos. Interactive, interactive presentations, quizzes, interactive timelines, other content that has been developed at H5P (Richtberg & Girwidz, 2019). The H5P framework consists of a web-based content editor, a website, for various types of content, plugins for existing content management systems, and a file format for incorporating HTML5 resources. H5P provides plugins for Learning Management Systems (LMS) such as Moodle and can be used for learning analytics. Another tool that can be used to create interactive videos is Adobe Spark. New videos have to be recorded to realize an interesting scenario that is adapting a video to an existing H5P by simply adding an interactive task. With the H5P a variety of ways can be used to enhance learning with videos and specific questions can be placed at the beginning or quizzes can be placed at the end of the video (Singleton & Charlton, 2020).

Performance Skills

Performance skills are one of the skills that must be possessed by students to apply their knowledge in carrying out certain tasks in a variety of situations various contexts according to indicators of competency achievement (Shavelson et al., 2019). Performance skills can assess learning processes and products both offline and online in Physics learning and emphasize process compared to results. To grow the performance of students can be done by: 1) students demonstrate a process; 2) the process demonstrated can be observed directly, 3) provides a more complete and natural evaluation for several types of reasoning, oral abilities, and physical skills, 4) makes an agreement between educators and students about assessment criteria and assignments to be done, 5) assess learning outcomes and complex skills, 6) provide great motivation for students (Cohen et al., 2018).

STEM

STEM in learning activities, will make students have different ways of thinking and be able to develop critical thinking skills, so that the final results are able to be applied (Ntemngwa & Oliver, 2018). Things that need to be considered so that the use of STEM in learning becomes effective are 1) carrying out manipulative activities in the learning process; 2) implementing cooperative learning; there are activities in the form of discussions accompanied by investigations; 3) there are questions and hypotheses in problem solving; 4) use the flow of justification in thinking; 5) when solving a problem, an approach is used; 6) integrate technology; the teacher has a role as a facilitator in learning activities; Instructions are used for assessment (Diansah & Suyatna, 2021). The STEM approach in learning activities can be applied at all levels of education. This is because the aspects contained in this approach do not depend on age.

Learning Loss

Learning loss is one of the concepts defined as the imperfection of the learning process in schools (Kashyap et al., 2021). The non-maximum learning process results in the information obtained by students and student learning outcomes that are also not optimal. Apart from that, learning loss will also have an impact on the quality of human resources that will be born in the years during the Covid-19 pandemic Lu et al. (2020). Online learning, which was implemented suddenly at the start of the pandemic, was not accompanied by the readiness of schools, teachers, students and parents as student learning companions at home to deal with these changes, so this unpreparedness led to learning loss during the Covid-19 pandemic (Cerelia et al., 2021). The change in the learning system from face-to-face in class (offline) to an online learning system that is fully implemented changes the approaches, models and

learning strategies applied by teachers, and changes student learning styles (Muskita et al., 2022).

Method

This research method is research and development (R&D). The development procedure uses the ADDIE model, namely: analysis, design, development, implementation, and evaluation.

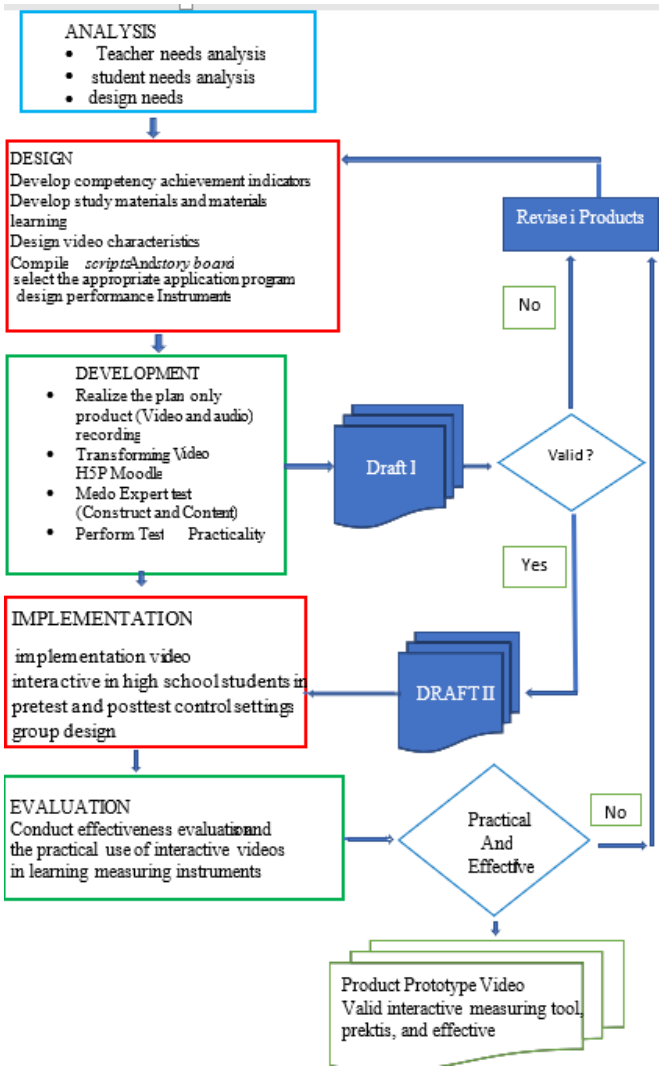

Figure 1. Research flow

Analysis

The analysis phase contains need assessment activities, namely identifying the needs for video material on electrical measuring instruments for physics teachers and high school students. Identification of needs includes content, form, characteristics, design, and systematics. The data collection instrument used a closed questionnaire which was distributed to physics teachers and high school students in Lampung Province. Data collection techniques using Google Forms. Respondents were taken based on their willingness to fill out the Google form. Analysis of the data from the questionnaire results is described in percentage form, then interpreted qualitatively.

Design

This activity is a systematic process that starts from determining competency achievement indicators (GPA) for KD regarding electrical measuring instruments, compiling learning materials and study materials, compiling scripting and video story boards, determining application programs for making videos, compiling performance test instruments. The content of the video content on measuring instruments contains STEM content and is designed to foster performance skills and overcome learning loss.

Development

At this stage all design results are realized into products that are ready to be implemented with the stages of video and audio recording, video editing, revision. The video product is then integrated with the H5P module in the Moodle LMS so that it becomes interactive. All of these products (Draft I) were tested for validation by 3 experts in the field of physics education and learning technology as well as 3 physics teachers. The validation process was carried out as shown in the flow chart in Figure 2. After the product was declared valid, six high school students tested the readability and ease of use. The instrument used to test validation, readability, and ease of use is a questionnaire. Analysis of the data from the questionnaire results is described in percentage form, then interpreted qualitatively.

Implementation

This Implementation phase, is the video trial stage that has passed the validation, readability, and ease of use tests (Draft II), in actual classes. Field trials were carried out using a quasi-experimental research design, namely the non-equivalent pretest posttest control group design. The experimental class was given a lesson on electric measuring instruments assisted by the video of the development results. Videos are taught to students through e-learning. Each student who is a research sample in a controlled manner carries out learning according to what has been planned in the lesson plan. The control class was given online learning without developing video results, but using media that is usually used by the teacher concerned.

Evaluation

The evaluation stage is carried out to determine the feasibility of a product resulting from the development. In the evaluation stage, the practicality and effectiveness of the video developed will be tested. Practicality will be measured using questionnaires and observation sheets.

Questionnaire will given to teachers and students who were the test subjects in this study. Analysis of the data from the questionnaire results is described in percentage form, then interpreted qualitatively. Observation sheets are used to observe student behavior and activities during the learning process. Observation results were analyzed qualitatively descriptive. The effectiveness of interactive videos is measured using performance tests and cognitive aspects. The effect of using the developed video was determined based on the N-gain value of the experimental class and the difference in the average N-gain between the experimental class and the control class. Tests were carried out using independent sample t tests and paired sample t tests if the data were normally distributed. In the event that the data is not normally distributed, the effectiveness test uses two independent sample tests and two related sample tests.

Result and Discussion

The results of the research on the development of STEM-based Interactive Video based on H5P Moodle with STEM content to grow performance as an effort to overcome learning loss in electrical measuring instrument material include the results of analyzing the needs of teachers and students, results of validity tests, results of practicality tests, and results of effectiveness tests. As for the results of the empirical study analysis, interviews and data collection were carried out using a closed questionnaire which was distributed to 21 high school physics teachers in Lampung Province and 128 students at SMAN 1 Kalirejo, Central Lampung through the Google form. The results of the analysis of the needs of teachers and students obtained information in the form of problem identification, the needs of teachers and students. which can be seen in Table 1. Table 1 Identification of problems and needs of teachers and students.

Table 1 shows that high school physics teachers in Lampung province with a sample of 21 teachers have not maximally used interactive learning videos when face-to-face learning is limited but only a few, namely 35.94%. Then as many as 128 students of SMAN 1 Kalirejo Lampung were experiencing difficulties in understanding electrical measuring instruments, especially in using and how to read measurement results as much as 86.72% due to the limited practicum tools at school which were inadequate as much as 38.1%. To cultivate students' performance skills as an effort to overcome learning loss in electrical measuring instrument material, an interactive video with STEM content based on H5P Moodle is needed. Interactive videos are expected to be used by teachers as an effective and efficient learning resource in limited face-to-face learning.

Table 1. Suggestions for Improvement from Expert Validation Tests

V	Improvement Suggestions	Fix it
1	The interactive videos that have been developed are good and feasible, improvements in several parts include unstable sound frequencies, non-smooth video cuts, added stimulus and introductory videos, and grammar.	Video repairs have been made which can be seen on the LMS account http://103.175.205.252/login/index.php User : admin2 Password: admin2
2	-Recheck the question. -Typography, writing, spelling fixed -Pay attention to the subtitles -Check the video again if the indicator is in -Examples of electrical installations at home for introductory videos -Customize the introduction video suggestion based on no 7	Questions that have been fixed can be seen in the LMS account http://103.175.205.252/login/index.php User : admin2 Password: admin The introduction video has been fixed on the LMS
3	-Videos are interactive and can be used in the learning process	
4	-Fix sound frequency on Video -Fix on viso bumper measuring amperage, -Improvements to the video measuring resistance from 1:10 minutes to 1:14 minutes, because the video vibrates a little.	The video has been fixed on the LMS which can be seen in the link below http://103.175.205.252/login/index.php

The results of the preliminary study obtained by the researcher as well as the results of the discussion of educators and supervisors conclude that the need for learning media to be developed is an interactive video with STEM content based on the H5P Moodle to foster performance skills as an effort to overcome learning loss in the material for measuring electricity. It is carried out through a systematic process starting from determining indicators of achievement of competencies, basic competencies regarding electrical measuring instruments, learning objectives in the video. Then compile scripting and video story boards. The application used is the H5P application which is embedded in the LMS (learning management system).

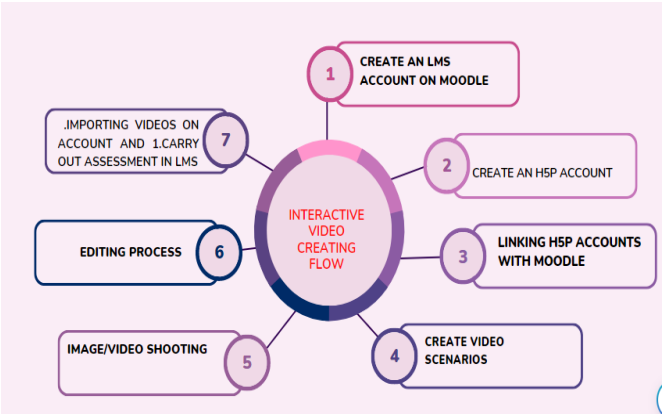

Figure 2. Stages of the H5P moodle-based interactive video creation flow

Information:
1. Create an LMS account on Moodle
2. Create an H5P account
3. Linking H5P accounts with Moodle
4. Create Video scenarios
5. Image/Video shooting
6. editing process
7. Importing Videos on account
8. Carry out assessment in LMS

Validity
Validation Test Results

Table 2. Validation Test Results

Validity Indicator	Percentage of validator scores (%)				Average percentage (%) Validity	Validity Criteria
(2)	(3)				(4)	(5)
	(1)	(2)	(3)	(4)		
Construction Media and Design						
Design view	75	100	100	91.60	92	Very high
Text or Typography	100	87.50	75	87.50	88	Very high
Media images	100	91.60	75	100	92	Very high
Navigation and interactive links	100	95.80	95.80	95.80	97	Very high
Content/ Material						
The suitability of the contents of the material with GPA, KD, Learning Objectives	65	93.20	93.20	95.50	87	Very high
Narration and audio quality	82	89.30	85.70	92.80	87	Very high
Quality of video and animation	87.50	87.50	62.50	100	84	Very high
Principles of multimed	71.40	92.86	100	92.85	89	Very high
Design						
Average					87	Very high

Practicality
Product Readability Test Results

Table 3. Product Readability Test Results

Indicator	Average Value	Percentage of Average Value (%)	Category
Clarity of learning objectives	3.50	87.50	Very good
Appropriateness of the application with the concept of the material	3.90	97.50	Very good
Media suitability with student characteristics	3.70	92.50	Very good
Flexibility in media use	3.90	97.50	Very good
Ease of understanding	3.60	90.00	Very good
materials and illustrations	3.70	92.50	Very good
Study independently	4.00	100.00	Very good
Material equipment	4.00	100.00	Very good
The suitability of the material with the learning objectives	4.00	100.00	Very good
Material depth	4.00	100.00	Very good
Material mess	4.00	100.00	Very good
Image and video accuracy	3.90	97.50	Very good
Material evaluation	3.90	97.50	Very good
language use	3.50	87.50	Very good
Text readability	4.00	100.00	Very good
Letter format	4.00	100.00	Very good
Media view	4.00	100.00	Very good
Use of sound effects	3.90	97.50	Very good

Indicator	Average Value	Percentage of Average Value (%)	Category
sound clarity	4.00	100.00	Very good
Media appeal	3.80	95.00	Very good
Pronunciation and intonation of voice	3.90	97.50	Very good
Video duration	3.70	92.50	Very good
Video quality	3.80	95.00	Very good
Fluency of software/media	3.80	95.00	Very good
Ease of use of media	3.50	87.50	Very good
Clarity of instructions in the media	3.80	95.00	Very good
Navigation key	3.90	97.50	Very good
Average amount	3.80	96.00	Very good

Table 4. Student Response Test Results

Student response indicators	Average value (%)	Category
Characteristics of Interactive Video	86	Very good
Application of knowledge and skills	87	Very good
Student Perceptions About Satisfaction	86	Very good
Student Perceptions About Individual Features	88	Very good
Statement of Use Interactive STEM-based video based on H5P Moodle	88	Very good
% Total Average value	87	Very good

Table 5. Educator Response Test Results

Assessment Indicator	Average value	Average percentage %	Category
The suitability of the media with the syllabus	18.00	90.00	Very good
Clarity of learning objectives	17.00	85.00	Very good
Suitability of learning objectives	20.00	100.00	Very good
The suitability of the media with the characteristics of the material and students	17.00	85.00	Very good
Program support for learning	20.00	100.00	Very good
Program support for learning	17.00	85.00	Very good
Study independently	19.00	95.00	Very good
Flexibility in media use	17.00	85.00	Very good
The suitability of the title of the material with the material presented	19.00	95.00	Very good
Ease of understanding the material and illustrations	17.00	85.00	Very good
Appropriateness of the application with the concept of the material	19.00	95.00	Very good
Material clarity	16.00	80.00	Very good
Material mess	19.00	95.00	Very good
Material equipment	17.00	85.00	Very good
The suitability of the material with the learning objectives	19.00	95.00	Very good
Material depth	18.00	90.00	Very good
The suitability of the illustration with the material	19.00	95.00	Very good
Image and video accuracy	19.00	95.00	Very good
Material evaluation	19.00	95.00	Very good
Clarity of reference material	17.00	85.00	Very good
The suitability of the material with the development of ICT	19.00	95.00	Very good
Use of spelling and terms	17.00	85.00	Very good
language use	19.00	95.00	Very good
The media clarifies the material	16.00	80.00	Very good
The media attracts students' attention	19.00	95.00	Very good
Equalizing students' perceptions of the material	18.00	90.00	Very good
Provide learning opportunities	18.00	90.00	Very good
Facilitate the teacher in delivering the material	18.00	90.00	Very good
Average amount	18.00	90.50	Very good

Table 3 shows that the average percentage of product readability test results with aspects of 27 indicators is in the very good category, which is an average percentage of 96%.

Table 4 shows that the percentage obtained was 87% in a very good category so that it can be concluded that students gave a positive response to the application of H5P Moodle-based STEM-based Interactive Video in

learning, so it can be said that H5P Moodle-based Interactive Video is very practical to use as a learning tool. Learning resources in online learning (online).

Table 5 shows that the percentage of the total average score of educators' response tests in learning using Interactive Video with STEM-based H5P Moodle obtained an average percentage of 90.5% in the very good category.

Effectiveness

N-Gain Test Results

This test was conducted to determine the increase in pre-test and post-test scores. The results of the average N-Gain test for the Experiment Class and Control Class can be seen in Table 6.

Table 6. N-Gain Average Test Results

Class	N-Gain	Category
Control	0.2247	Low
Experiment	0.5733	Currently

Table 6 shows that the normalized N-gain average value is 0.5733 in the Experiment Class. It can be said that the effectiveness of the N-gain value in the experimental class is 57.33%, which is quite effective and belongs to the medium category classification. For the normalized N-Gain average value in the control class it was obtained at 0.2247, it is said that the effectiveness of the N-gain value in the control class was 22.47% so that it was included in the less effective category and low classification for the control class. The results of the effectiveness test showed that the H5P-based interactive STEM-filled Moodle video to foster performance skills as an effort to overcome learning loss can be used in Physics learning in KD 3.2 and 4.2. which includes measurement principles, physical quantities, accuracy, precision, significant figures, scientific notation, and presenting the results of measuring physical quantities using appropriate equipment and techniques for an investigation can be seen in Table 2. The normalized N-Gain test results to determine the increase in pre -test and post-test.

Interactive videos that are implemented in experimental classes can increase student understanding and retention, improve student learning outcomes, and have great potential to facilitate active learning in blended learning so that they can overcome learning loss in limited face-to-face learning (Lu et al., 2018). The application of blended learning is able to balance collaboration between online and face-to-face learning, namely mutually reinforcing to increase student learning achievements that have not been achieved due to learning loss that occurs in students. This is because in the Interactive Video uploaded to the LMS (learning management system) Moodle embeds an interactive learning component that stimulates students' thinking and encourages independent learning (Sinnayah et al., 2021). In addition, Interactive Video can stimulate cognitive and meta-cognitive (Bennett, 2017).

Table 7. Results of Achievement Scores of Performance Skills in Experimental and Control Classes

Performance Skills Indicator	Experiment Class		Control Class	
	Ave-rage value	Average percen-tage (%)	Ave-rage value	Average percentage (%)
Tool stringing accuracy	3.20	80.00	3.00	75.00
Skills in operating electrical measuring instruments	3.40	85.00	2.60	66.00
Accuracy in reading measurement results using an electric meter	3.40	85.00	2.60	66.00
Accuracy in recording data in the results of measurements with electric measuring instruments	3.40	85.00	3.00	75.00
Ability to analyze the results of measurements of electric current, voltage and resistance	3.40	85.00	2.80	72.00
Ability to present or present the measurement results of electrical measuring instruments	3.80	95.00	3.2	80.00
Ability to draw conclusions	3.80	95.00	3.20	80.00
Amount	24.40	610.00	20.40	510.00
Average value	3.80	87.00	2.90	73.00

Information: Less skilled= (0.00-40.00)%; Enough Skilled= (40.10-60.00)%; Skilled= (60.10-80.00)%; Very skilled= (80.10- 100.00)%

The practicum is carried out to develop the performance skills of electrical measuring instruments, namely the use of a multimeter, to measure electric voltage, electric strength, and resistance in resistors. The experimental class, which consisted of 35 students, was then divided into five groups to carry out practicum according to existing procedures. The results of the achievement scores for performance skills in the

experimental class and control class can be seen in Table 7. Table 7 shows that the skills of students on the seven indicators are on average very good or very skilled because they achieve an average performance skills achievement score of 87.5%. On the indicator of the accuracy of assembling the tool, the percentage value is obtained 80% is in the high category but the other six indicators reach a percentage value above 80%, this shows that Interactive Video is one of the most effective ways to integrate various features such as moving images, stories, content, all of which are enriched with interactive elements so as to foster performance skills, working on students (Tomlin, 2005) and being able to overcome learning loss in the material for electrical measuring instruments during limited face-to-face learning which is carried out in blended learning.

The performance skills of students on the seven indicators are on average very good or very skilled because they achieve an average performance skill achievement value of 87% in the experimental class while the average percentage of performance skills in the control class is 73%, this showed that Interactive Video as a learning resource in the experimental class was very effective for growing performance skills in students in the experimental class compared to the control class which did not use STEM-based Interactive Video based on H5P Moodle. As for the increase in the average value of performance skills by 14%, this shows that the Moodle H5P-based STEM-based Interactive Video fosters performance skills as an effort to overcome learning loss in the material for electrical measuring instruments during limited face-to-face learning which is carried out using blended learning. According to the findings *Blended learning* combines online digital resources with traditional classroom activities and enables learners to achieve higher performance skills through well-defined interactive strategies involving both online and traditional learning activities (Hameed et al., 2008).

Conclusion

Based on the results of the research and discussion, it can be concluded that the H5P Interactive Video Based on Moodle H5P to Build Performance Skills as an Effort to Overcome Learning Loss in the Material of Electrical Measuring Instruments is declared valid with a percentage obtained an average construction validation value of 92% and content validation obtained an average score by 87%. The validity of the Moodle-based H5P STEM-loaded Interactive Video is explained for several reasons by its attractive design/layout appearance, precise text layout and typography, clear media images, ease of navigation and interactive links. Moodle-based interactive STEM videos are stated to be very practical with product readability obtaining an average percentage of 96% categorized as very good. The responses of educators and students using Interactive Video with STEM-based H5P Moodle content obtained an average percentage of 87.64% and 87% in the very good category. Interactive videos with STEM-based Moodle content are declared effective because they can foster performance skills as an effort to overcome learning loss in the material for electrical measuring instruments with an average N-Gain value of 0.5733 in the experimental class, with an effective average N-Gain value of 57.33% which is categorized as moderate. For the average N-gain value in the control class of 0.2247, it is said that the effectiveness of the average N-gain value in the control class of 22.47% is in the low category. The increase in the average N-again value between the experimental class and the control class was 34.86%, which means that interactive STEM-based videos based on the H5P Moodle are quite effective in growing students' performance skills in limited face-to-face learning as an effort to overcome learning loss.

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Author Contributions
The author's contribution in the field of education is to contribute to the development of H5p Moodle-Based Interactive Stem-Loaded Video to Grow Performance Skills as an Effort to Overcome Learning Loss in Electrical Measurement Materials. This aims to improve the physical quality of education in Indonesia.

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Conflicts of Interest
No Conflicts of Interest.

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