Original Article

The development of interactive multimedia in e-learning Undiksha to improve soccer learning outcomes in FOK Undiksha

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Abstract
Insufficient learning resources, lack of innovation, and lack of updates in the learning content used in the learning process can negatively impact student learning outcomes. Therefore, in soccer learning practice theory courses it is important to develop interactive learning content in the form of interactive multimedia. This study aims to develop an interactive multimedia in E-learning for the study program of Physical Education, Health and Recreation Undiksha. This study also assessed the responses of lecturers and students to the development of interactive multimedia in E-learning in the practice theory of soccer learning courses. The Research and Development (R&D) was the type of this research and followed the ADDIE development model which had five stages of activity, namely analysis, design, development, implementation, and evaluation. The results of the validity assessment was based on the content expert test and the media and design expert test showed an average value of 1.00 which can be categorized as very good. In addition, using the N-Gain calculation, the effectiveness test was 0.75 which can be categorized as effective. The response obtained from students was with an average score of 68 categorized as very valid. Meanwhile, the responses from lecturers reached an average value of 48 which was categorized as very valid as well. The advantages possessed in the interactive learning content in the soccer learning practice theory course were (1) Ease of access to interactive multimedia, interactive multimedia can be accessed by students and lecturers via smartphones or laptops that have an internet connection. (2) Facilitating the delivery of material, interactive multimedia can help and facilitate educators in delivering material online and offline. (3) Interactive learning content contains complete and interactive material packaged in the form of text, images, audio and video. (4) Students can learn independently with interactive multimedia because they can interact directly with the material. (5) Interactive learning content contains quizzes and evaluations that can be done by students to determine their abilities related to learning materials. In conclusion, the development of interactive multimedia in soccer learning practice theory courses can be categorized as effective in improving student learning outcomes.
Keywords: interactive multimedia; E-learning; soccer; learning outcomes.

Introduction

This century has witnessed rapid progress in the development of information and communication technology. The use of this technology has become a basic need to support human life, whose main purpose is to facilitate and help complete various tasks, including education. This condition encourages teachers to be more creative and innovative in utilizing learning media to change the knowledge and skills given to students (Chandra et al., 2022). In the current era of globalization and advances in information technology, the development of interactive multimedia has become an integral part of the world of education and communication. The development of information technology has provided a solid foundation for creating a more dynamic, interesting and effective learning experience. Interactive multimedia is not just a tool, but a tool that can enrich the interaction between the user and the content. This article discussed how advances in information technology have played a significant role in changing the landscape of interactive multimedia, enabling the development of more creative and relevant content to enhance learning and communication. As information technology continues to evolve, its positive impact on the establishment of interactive multimedia as an innovative and efficient learning tool can be observed. Increased student interaction with the subject matter occurs through the development of learning media that use multimedia, animation, and interactive simulations. This creates a more interesting and in-depth learning experience for students (Trenggono Hidayatullah et al., 2023).

Soccer stands out as the most popular sport in the world (Wesson, 2019). Soccer is recognized as the world's most popular sport, played and loved by millions of people from all walks of life. Soccer matches involve speed, technical skill, tactics and teamwork, making it a passionate and dynamic sporting event. It is often a source of global entertainment and national pride for many countries. Physical Education, Health, and Recreation (PJKR) study program is one of the study programs available at Ganesha University of Education. In

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this study program, there is a course called practice theory (TP) Soccer Learning which is a compulsory course in semester two (2). In the curriculum of this course, there are various topics discussed, such as discussing the history, development of soccer, basic and advanced techniques, training methods, playing techniques, rules, refereeing, organizing soccer games, and skills tests in soccer learning. By learning all these materials, it is expected that students will have the ability to be able to design, implement, and evaluate soccer learning that is inspiring, creative, innovative, challenging, fun and motivating.

Nevertheless, in practice, in the field, students have not been able to apply properly and correctly basic and advanced techniques, training methods, playing techniques, rules, refereeing, organizing soccer games, and skills tests in soccer learning. This can be seen from the learning outcomes of students who can be categorized as still not good. Currently, they have not been able to practice well related to soccer technique movements. There are various factors that can influence this situation, such as learning methods that still rely on teaching materials in the format of learning modules, so the content is still less interactive. Current learning still prioritizes the delivery of material in one direction centered on the lecturer or is still conventional. Learning models like this can cause students to feel bored because the main focus is on understanding and memorizing material, while in the 21st era, mastery of material is a key aspect that must be considered by students (Setyaningsih et al., 2020). The majority of students experience confusion when dealing with material in books and online learning videos. They are able to understand concepts theoretically, but they face difficulties when trying to apply them in practical situations. Therefore, learning resources are needed that can support the development of students' practical skills.

To achieve an innovative and creative level of learning, an interactive learning multimedia is needed that can improve students' understanding of learning materials. The implementation of interactive multimedia should be an integral part of the preparation of teaching materials in the learning process. This step is important to make the teaching and learning process more interesting, avoid boredom, and prevent monotony, so that knowledge transfer can take place effectively (Dewi et al., 2018). Therefore, lecturers need to have the ability to design and integrate interactive multimedia into the learning process to achieve the desired learning objectives. In doing this, educators are expected to be able to arrange interactive multimedia with creativity so as to provide visual appeal and provide a sense of novelty for students. Hopefully, the development of learning content in the form of interactive multimedia will provide solutions to problems that arise during the learning process. Through the development of interactive multimedia in E-Learning, it is expected to overcome various obstacles encountered during the learning process. To achieve this, it is important to create effective and innovative learning conditions, so that the interaction between lecturers and students can occur well, and the learning environment can become more dynamic and enjoyable (Setyaningsih et al., 2020). The application of relevant learning innovations has great potential to improve student learning outcomes. In line with research conducted by Johansyah Lubis et al who used the help of android applications to improve pencak silat learning outcomes. This learning design can can be the right formula to improve student pencak silat learning outcomes (Lubis et al., 2022). The use of teaching strategies also greatly affects student learning outcomes (Sgrò et al., 2020). Teaching strategies refer to the approaches or methods used by educators to design learning experiences in order to achieve the desired learning objectives. Teaching strategies consider various aspects such as learner characteristics, learning materials, and the learning environment.

To overcome the problems described, a solution can be found by implementing innovations in the learning process. One such innovation is the development and implementation of interactive multimedia in E-Learning that can effectively and dynamically deliver learning materials. Interactive learning multimedia refers to a learning program that combines elements such as text, images, audio, video, and animation in an integrated and structured format (Sujono, 2017). Creating lessons that resonate with every student is of truly importance, particularly when it comes to teaching soccer, various factors need to be considered (Greve et al., 2022).

Adobe Captivate is one of the popular software used to create interactive multimedia. By its various advanced features, Adobe Captivate enables content creators to develop dynamic and engaging learning experiences. Adobe Captivate supports integration with various learning platforms (LMS). This makes it easy for users to distribute content, track participant progress, and manage overall learning outcomes. Adobe captivate can be used for demonstrations, simulations, and quizzes in learning (Santosa et al., 2022). This program allows users, in this case students, to interact with learning content using technology in order to achieve the set learning objectives. Through the development of interactive multimedia in E-Learning, it is expected to provide solutions to the problems previously described and at the same time can improve student learning outcomes in soccer learning practice theory courses. Learning resources created with the use of technology will enable students to attain enhanced performance (Muruganantham, 2015).

Materials & methods
Constructivistic theory

Constructivist theory views that it is the individual who is learning who actively constructs their own knowledge (Yuberti, 2014). Knowledge resides in the individual who is learning, and cannot be easily

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transferred from lecturers to students. In a constructivist perspective, knowledge is considered to be a continuous process of formation, where individuals continually reconstruct their understanding as they continue to receive new understanding. Contructivism as the foundation of the contextual learning (philosophy), namely that knowledge is built by humans little by little, and the result is a limited context and not present suddenly (Budyastuti & Fauziati, 2021).

Interactive Multimedia

Technology has a vital task in learning (Hadi et al., 2022). Multimedia learning is a learning approach that utilizes computers to create and combine components such as text, graphics, audio, moving visual content (video and animation), as well as tools and links that allow users to interact, explore, create, and communicate (Rusman et al., 2015). Multimedia is a technology that can be applied in creating learning content that involves interaction. Interactive learning multimedia refers to learning programs that combine text, images, audio, video, and animation in a structured manner, allowing users to interact with the program through technology, with the aim of achieving learning outcomes (Rusman et al., 2015). In the context of interactive learning multimedia, interactivity is a very important element because it will affect the level of student involvement in the use or implementation of the learning program. The use of digital media can be helpful in the learning process (Greve et al., 2022).

E-Learning

E-learning is a web-based form of distance learning, using technologies such as computers and the internet. E-learning integrates teaching methods with technology as a learning tool. Currently, e-learning has experienced rapid development compared to previous years, and is widely used in the world of education with various applications available to support the e-learning learning process (Irsyad et al., 2023). Undiksha has implemented E-Learning as one of the online learning media. Undiksha has its own Elearning named E-Learning Undiksha.

Soccer Learning Practice Theory.

Soccer learning practice theory is one of the courses in the Physical Education Health and Recreation study program at Ganesha University of Education (Undiksha). This course is included as a compulsory course taught in the second semester (2). The focus of this course is to provide an understanding of the history, development of soccer, basic and advanced techniques, training methods, playing techniques, rules, refereeing, organization of soccer games, and skills tests in soccer learning. The materials taught in this course are based on the syllabus that has been established and observed during the curriculum development process.

Adobe Captivate

Adobe Captivate application is one of the options for creating interactive media. The advantages of Adobe Captivate software lie in its ease of use and its ability to produce interactive media. Interactive multimedia results produced through Adobe Captivate can also be easily shared and accessed online (Santosa et al., 2022). The way Adobe Captivate works is similar to PowerPoint, but the advantage of Adobe Captivate lies in the availability of easy-to-use quiz and test templates (Kurniawati & Ekohariadi, 2020).

This study applied a research and development (R&D) approach. R&D is a type of research aimed at creating specific products and evaluating their success and effectiveness (Sugiyono, 2017). In the context of this research, the product developed was interactive multimedia in E-Learning to improve students soccer learning outcomes. This research specifically focused on the development of interactive multimedia in E-Learning for soccer learning practice theory courses.

In this study, the ADDIE (Analyze, Design, Development, Implementation, Evaluation) development model was used. This model has been systematically designed with structured steps to overcome learning problems related to learning resources that are suitable for learning needs and characteristics. This development model consisted of five stages, namely analysis (analyze), design (design), development (development), implementation (implementation), and evaluation (evaluation) (Tegeh et al., 2015). Each stage in the ADDIE model involved an evaluation process. The ADDIE model is a commonly utilized framework for designing and development of interactive multimedia materials (Rosmiati & Siregar, 2021). The steps in the ADDIE development model can be seen in the figure below.
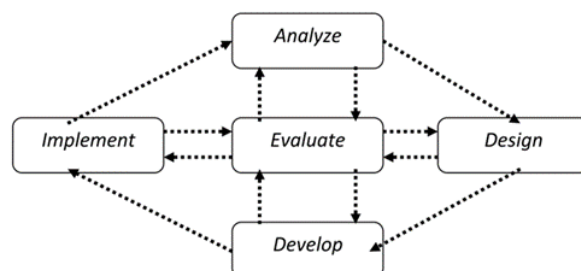

Figure 1 Stages of the ADDIE Development Model (Branch, 2009)

This interactive multimedia development research focused on the students of the Physical Education, Health and Recreation Study Program at Undiksha who were taking or have completed the soccer learning practice theory course. In this study, 40 students were involved as research subjects.

The data that has been collected were analyzed qualitatively and quantitatively in this study. The data in question consisted of the information on the learning resources, student and learning characteristics, validity of interactive multimedia, lecturer and student responses to interactive multimedia, success criteria, and effectiveness of interactive multimedia in improving student learning outcomes, especially in soccer learning practice theory courses.

Table 1 Data Collection Technique

No	Data Type	Method	Data Source
1	Information about learning resources	Interview	Lecturer of soccer learning practice theory course
2	Characteristics of students and learning	Distribution of Questionnaires	Students who have taken soccer learning practice theory courses
3	The validity of interactive multimedia	Distribution of Questionnaires	a. Learning content experts b. Learning media-design expert c. Individual test d. Small group test e. Field test
4	Response of lecturers and students	Questionnaire Distribution	Lecturers and Students in the Physical Education, Health and Recreation Study Program
5	Effectiveness of interactive multimedia	Test / Questionnaire Distribution	Students who have taken or are taking soccer learning practice theory courses.
6	Criteria for Success	Test / Distribution of Questionnaires	Students who have taken or are taking soccer learning practice theory courses.

The data analysis regarding the validity of interactive multimedia aims to assess the level of conformity of the content with predetermined criteria, based on the assessment of predetermined validators. This assessment involved the use of validation sheets given to experts. The validity of this interactive multimedia can be tested through two stages, namely the content expert test and the media-design expert test. Furthermore, this assessment is continued with the individual test stage, small group test, and field test. After all the test stages have been completed, the next step is to calculate and analyze the data to evaluate, revise, and improve the interactive multimedia. This interactive multimedia can be assessed for validity through two methods, namely the content expert test and the media-design expert test. When conducting the assessment in the expert test, the assessment results were calculated using a formula known as the Gregory formula.

Table 2 Expert Assessment Tabulation (Agustini et al., 2019)

		Assessor 1	
		Not appropriate	Appropriate
Assessor 2	Not appropriate	(A)	(B)
	Appropriate	(C)	(D)

Calculation of expert validity can be done using the formula: Content Validity $= \dfrac{A}{A+B+C+D}$

Description:

A   : cells indicating disagreement between the two raters

B and C: cells that show differences in views between raters

D   : cells indicating valid agreement between the two raters

Table 3 Expert Test Validation Level Criteria (Septiari et al., 2020)

Validity Coefficient	Level of Validity	Criteria
0,91 - 1,00	Extremely High	Highly Valid
0,71 - 0,90	High	Valid
0,41 - 0,70	Enough	Quite Valid
0,21 - 0,40	Low	Less Valid
0,00 - 0,20	Extremely Low	Very Less Valid

The validation process involving individual tests, small group tests, and field tests was carried out by students who were or had experience in taking soccer learning practice theory courses in the Physical Education, Health and Recreation study program. The calculation of the results of each subject is done using the following formula (Agustini et al., 2019).

Percentage $= \sum \dfrac{(jawaban \times bobot\ tiap\ pilihan)}{n \times bobot\ tertinggi} \times 100\%$

Description:

$\sum$: Amount

n   : Total number of questionnaire items

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Then, to calculate the overall subject can use the following formula:

$$Percentage = \frac{F}{N} \times 100\%$$

Description:
F   : Total percentage of all subjects
N   : Number of subjects

For the data to provide meaning and decision making, the determination of the results of product reviews and trials can be seen in the following table:

Table 4 Achievement Level Conversion on a Scale of 5

Level of Achievement (%)	Qualification	Criteria
$90 \leq P \leq 100$	Excellent	Highly Valid
$75 \leq P < 90$	Good	Valid
$65 \leq P < 75$	Enough	Quite Valid
$55 \leq P < 65$	Less	Less Valid
$P < 55$	Very less	Very Less Valid

To determine the effectiveness of the product, an evaluation was carried out by using a pretest and posttest group control design on a group of students who had taken the course under study (Agustini et al., 2020). N-Gain was used in the calculation of the gain score test, where Gain was used in the increase in the student ability after learning (Agustini et al., 2019). The results were obtained from the difference between pre-test and post-test results. N-Gain can be calculated using the following formula:

$$N - Gain = \frac{posttest\ score - Prettest\ score}{Maximal\ score - Prettest\ score}$$

For categories based on the normalized N-Gain criteria can be seen in the following table:

Table 5 N-Gain Normalized Criteria (Agustini et al., 2020)

Index	Criteria
$0.70 < g < 1.00$	Effective
$0.30 \leq g \leq 0.70$	Moderately Effective
$0.00 < g < 0.30$	Less Effective

The Success Criteria Test for interactive multimedia in the soccer learning practice theory course was carried out by comparing the post-test results with the passing grade that has been determined for the course. The researchers can set a minimum average score for the course, for example 50 or 70, depending on the basis or minimum learning completeness standard (SKBM) set by the lecturer as a success criterion (Santyasa, 2009). In this context, the KKM value for the soccer learning practice theory course was 61. In addition, the criteria for learning completeness can also be used as a success criterion. The calculation of the percentage of learning completeness can be calculated using the formula presented below (Dendo & Ate, 2019):

$$P = \frac{\sum number\ of\ points\ scored \geq KKM}{\sum students\ took\ the\ posttest} \times 100\%$$

After the results are obtained from the calculation using the formula above, the success rate criteria can be seen in the following table.

Table 6 Learner Success Level Criteria (Santyasa, 2009)

Success Rate	Predicate of Success
86 - 100%	Very High
71 - 85%	High
56 - 70%	Medium
40 - 55%	Low
< 40%	Very Low

The activity of analyzing lecturer and student response data aims to determine the responses of lecturers and students to the interactive multimedia developed. To calculate the analysis of lecturer response data and student response data, the descriptive statistics was used and the conclusions were based on the Ideal Mean (Mi) and Ideal Standard Deviation (SDi) (Agustini et al., 2019). Learner responses were explored using a questionnaire with a 5 Likert scale (values from 1 to 5) which was analyzed descriptively. The class average of lecturer and student response scores was calculated using the formula, as follows:

$$\bar{x} = \left(\frac{\sum x}{N} \right)$$

Description:
$\bar{x}$: Class average for response scores
$\sum x$: Number of response scores and learners
n   : Number of educators and learners

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In making decisions regarding the response of educators and students to interactive multimedia using a Likert scale that has five alternative answers. Alternative answers can be seen in the table as follows:

Table 7 Assessment Rubric for Lecturer and Student Response

Alternative Score	Positive Statement Score	Negative Statement Score
Strongly Agree (SS)	5	1
Agree (S)	4	2
Disagree (KS)	3	3
Disagree (TS)	2	4
Strongly Disagree (STS)	1	5

Meanwhile, to find the Ideal Mean (Mi) and Ideal Standard Deviation (SDi) values can use the following formula:

$$Mi = \frac{1}{2}(ideal\ highest\ score + ideal\ lowest\ score)$$

$$SDi = \frac{1}{6}(ideal\ highest\ score - ideal\ lowest\ score)$$

The average $\bar{x}$ of the lecturer and student response scores to the interactive multimedia is then categorized **using**

the guidelines as in the table.

Table 8 Criteria for Classification of Educator and Learner Responses (Santyasa, 2009)

Interval	Qualifications	Qualifications	Category
$Mi + 1{,}5\ SDi \leq \bar{x}$	Very Positive	Very Positive	Very Practical
$Mi + 0{,}5\ SDi \leq \bar{x} < Mi + 1{,}5\ SDi$	Positive	Positive	Practical
$Mi - 0{,}5\ SDi \leq \bar{x} < Mi + 0{,}5\ SDi$	Less Positive	Less Positive	Practical Enough
$Mi - 1{,}5\ SDi \leq \bar{x} < Mi - 1{,}5\ SDi$	Negative	Negative	Less Practical
$\bar{x} < Mi - 1{,}5\ SDi$	Very Negative	Very Negative	Very Less Practical

Results

Through the research that has been conducted, the researchers succeeded in developing an interactive multimedia product for the Soccer Learning Practice Theory course in the Physical Education, Health and Recreation Study Program, Ganesha University of Education. This research applied the Research and Development method with the ADDIE research model which consisted of five stages, namely analysis, design, development, implementation, and evaluation. The resulting product was then tested by the experts, including content experts and learning media-design experts. In addition, this study also involved the students in individual trials, small group tests, and field tests. In addition, lecturers and students also responded to the product, and testing was conducted to measure the effectiveness and success criteria of the product. The details regarding the test results are described below.

The analysis stage involved four activities, namely analyzing the characteristics of learners, courses, learning resources, and the research environment. The analysis of learners characteristics showed the students interest in learning using interactive multimedia. Therefore, interactive multimedia contained soccer material with various elements such as text, images, audio, and video that can support the learning process. Furthermore, the analysis of the Soccer Learning Practice Theory course revealed the existence of Basic Competencies (KD) and Learning Outcomes (CP) that must be achieved in the course. This course is in semester 2 with a weight of 2 credits. The analysis of learning resources involved interviews with lecturers who taught the course and distributing questionnaires to students in the Physical Education, Health and Recreation Study Program. The results show that various learning resources are used in learning such as textbooks, PowerPoint presentations, and learning videos made by lecturers who teach the course. In addition, direct observation in the PJKR Study Program indicated that the facilities and facilities used to support learning are adequate. These facilities included fields, classrooms, internet access (WIFI), and LCD projectors.

The results were obtained from this interactive learning content design activity by mapping the material on interactive multimedia. Material mapping was carried out in the soccer learning practice theory course for even semesters. The material mapped on interactive multimedia was adjusted to the basic competencies and learning indicators. The results of the material mapping were later be packaged in the form of interactive multimedia in the form of text, images, audio and video. The results obtained from interactive learning content interface design activities were in the form of interface design. The results obtained from the design of the Semester Learning Plan (SSP) were adjusted to the SSP obtained during observations in the soccer learning practice theory course.

The outcome of the product development stage was obtained through the implementation and realization of the learning content design. This included interface design and interactive learning material mapping. In the development of this interactive learning content, various software such as Adobe Captivate, Adobe Photoshop, Adobe Illustrator, and Adobe Premiere were used. The interactive learning content developed for the soccer learning practice theory course is adjusted to the interface design, basic competencies, learning objectives, and material mapping that have been previously compiled. The materials or teaching materials used in this interactive multimedia were prepared in accordance with the initial plan that has been determined. The validation from the experts in the field of learning content and media-design showed very valid results, with Gregory's calculation getting a value of 1.00 for content experts and 1.00 for media-design experts, which indicated a very high level of validity. The average ratings from the experts in content and media-design can be seen in the table below.

Table 9 Calculation Results of Expert Validity

Expert/Expert	Result
Content Expert	1,00
Media-Design Expert	1,00
Average	1,00

The implementation of interactive multimedia products was carried out on 2nd semester students, 4th semester students, and lecturers who teach soccer learning practice theory courses at the Undiksha Physical Education, Health and Recreation Study Program. There were six tests that have been carried out, namely individual tests, small group tests, field tests, effectiveness tests, success tests, and response tests from lecturers and students. The results of the individual trial showed a result of 91.33% with the qualification "Very Good". The small group trial produced a result of 91.9% with the qualification "Very Good". The results of the field trial reached 91.6% with the qualification "Very Good". In the effectiveness test, the N-Gain calculation resulted in a value of 0.75, which falls into the category of "Effective." The success test reached 100%, indicating that the use of interactive multimedia in the soccer learning practice theory course was able to improve student learning outcomes, with a pass rate that can be classified as "Very High". The results of the student response test, which involved 30 people, showed an average response score of 68. The qualifications were included in the "Very Positive" and "Very Practical" categories. Meanwhile, the results of the lecturer response test involving 2 people showed an average response value of 48, which can also be classified in the "Very Positive" and "Very Practical" categories.

The results of the evaluation at the analysis stage were adjusted to the components needed in the development of interactive multimedia for the soccer learning practice theory course. Evaluation at the analysis stage was carried out through observation, interview, and questionnaire distribution methods. Meanwhile, the evaluation results at the design stage were based on the interactive multimedia design process, semester learning plan, and interface design. At the development stage, the evaluation is based on the design of interactive learning content development, interface design, and student needs. The interactive multimedia includes information about indicators, learning outcomes, interactive learning materials, and evaluation. In addition, the learning content has also been tested by two experts in the field of learning content and two experts in the field of learning media-design. The evaluation at the implementation stage was obtained through individual tests, small group tests, field tests, effectiveness tests, success tests, and responses from lecturers and students.

Discussion

The development of interactive multimedia in soccer learning practice theory courses aims to improve student learning outcomes through material that is packaged in an attractive and interactive manner. Interactive multimedia can also be used as a new innovation for both lecturers and students in learning. In addition, this interactive multimedia can also be used as a learning resource for students and teaching materials for lecturers. The existence of this interactive multimedia is expected that students gain new knowledge and learning experiences, especially in soccer material.

The validity of interactive multimedia in the soccer learning practice theory course was carried out by two content experts and media-design experts. The data obtained from the expert's severe assessment, then were calculated by using the Gregory formula. From the tabulation calculation, a coefficient score of 1.00 was obtained, which means that the interactive learning content in the aspect of learning content already has "Very High" validity so that the content is suitable for use as a learning resource for students in the soccer learning practice theory course.

The activities carried out at the implementation stage were individual trials, small group trials and field trials. The respondents used in this activity were from semester 2 and semester 4 students. The implementation stage was carried out online and interactive learning content can be accessed with smartphones, tablets and

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laptops that have internet access. The results obtained from individual trials, small group trials and field trials obtained the category "Very Good" so that interactive multimedia was suitable for use in learning.

The effectiveness test activity was carried out to determine the effectiveness of interactive multimedia as seen from changes in student learning outcomes. In knowing changes in the student learning outcomes can be done with pre-test and post-test activities. The pre-test activities were carried out before respondents used interactive multimedia and the post-test was carried out after students used interactive multimedia. Based on the results of the calculation using the N-Gain formula, the result was 0.75 which was included in the "Effective" category. If the effectiveness test activities have been completed, it continued with the calculation of the level of success criteria. The calculation can be done by comparing the post-test results with the KKM value in the soccer learning practice theory course. The percentage obtained was 100% which can be categorized with the success predicate "Very High".

The activities to find student and lecturer responses can be done by conducting student and lecturer response tests to interactive multimedia. This activity aims to determine the level of ease or practicality of interactive multimedia. The student response test was carried out by using a student response questionnaire. The respondents used were 30 students. The results obtained based on the calculation are categorized as "Very Positive" with an average value of 68. Then for the lecturer response test was carried out using a lecturer response questionnaire. The respondents used were 2 lecturers who taught soccer learning practice theory courses. The results obtained based on the calculation are categorized as "Very Positive" with an average value of 48. The development of interactive learning content in the soccer learning practice theory course referred to the learning theory of constructivistic learning theory. Constructivistic theory understands that the learning process is the formation (construction) of knowledge carried out by the learner himself. (Yuberti, 2014).

The assessments and tests were carried out such as learning content expert tests, learning media-design experts, individual tests, small group tests, field tests, success criteria tests, student response tests and lecturer response tests. In the process of developing this interactive multimedia, it has several advantages and obstacles. The advantages possessed in the interactive learning content in the soccer learning practice theory course were, (1) Easing of access to interactive multimedia, interactive multimedia can be accessed by students and lecturers via smartphones or laptops that have an internet connection. (2) Facilitating the delivery of material, interactive multimedia can help and facilitate educators in delivering material online and offline. (3) Interactive learning content contains complete and interactive material packaged in the form of text, images, audio and video. (4) Students can learn independently with interactive multimedia because they can interact directly with the material. (5) Interactive learning content contains quizzes and evaluations that can be done by students to determine their abilities related to learning materials.

Conclusions
The researchers can produce an interactive multimedia product in the Soccer Learning Practice Theory course. The results of the design and development of interactive multimedia in the soccer learning practice theory course obtained test results on content experts and learning media-design experts of 1.00 which fell into the "Very Good" category. Expert test validation is an assessment stage carried out by experts or experts in related fields. In this study, two stages of expert testing were carried out, namely learning content experts and media-design expert tests.

To assess the extent to which the product is effective, evaluation is carried out through pre-test and post-test. The pre-test was conducted before students used the interactive learning materials, while the post-test was conducted after students used them. The results of the effectiveness test obtained an N-Gain value of 0.75 which can be categorized as "Effective".

The evaluation of the success of interactive multimedia in soccer learning practice theory courses was carried out by comparing post-test scores with the applicable KKM scores in the course. The success rate of interactive multimedia in improving student learning outcomes was 100% categorized as "Very High".

The results obtained in the development of interactive multimedia in the soccer learning practice theory course through the student response test obtained an average score of 68 which was in the "Very Positive" category. In addition, the results obtained in the development of interactive multimedia in the soccer learning practice theory course through the lecturer response test obtained an average score of 48 which included the "Very Positive" category. The evaluation of responses from students and lecturers was carried out to obtain responses to interactive multimedia in soccer theory courses. From these results, the development of interactive multimedia in soccer learning practice theory courses can be categorized as effective in improving student learning outcomes. Overall, the use of interactive multimedia in the learning process has been shown to have a significant positive impact on learning outcomes. The main advantage of interactive multimedia lies in its ability to create a more interesting, dynamic and actively engaged learning experience. The integration of interactive elements, such as simulations, test questions, and drag-and-drop activities, provides students with opportunities to be directly involved in the understanding of learning materials.

By presenting information through various media, such as text, images, audio and video, interactive multimedia can accommodate diverse learning styles, facilitating a deeper understanding of concepts. Students' and lecturers' responses to the use of interactive multimedia in certain subjects also show that this method motivates students, increases engagement in the learning process, and helps achieve learning objectives.

In addition, interactive multimedia also provides flexibility in terms of time and place of learning, allowing students to access materials anytime and anywhere as per their needs. This capability is particularly relevant in the context of distance learning or technology-based learning.

Thus, it can be concluded that the application of interactive multimedia has great potential to improve learning outcomes by creating a dynamic, interesting, and adaptive learning environment according to student needs.

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