



# Digital Book Student Development Course Based on Team-Based Learning in The Era of Society 5.0

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## ABSTRAK

*Kebijakan kampus merdeka belum disusun secara utuh dan benar sebagai sistem masih parsial, sehingga menyulitkan perguruan tinggi untuk melaksanakannya. Mata kuliah Perkembangan Peserta Didik sampai saat ini belum memiliki digital book yang mengintegrasikan model Team based learning di era society 5.0. Tujuan dari penelitian pengembangan ini adalah menciptakan digital book mata kuliah perkembangan peserta didik berbasis Team based learning di era society 5.0. Tahapan dalam penelitian pengembangan ini berdasarkan model Borg & Gall. Subyek penelitian adalah mahasiswa semester 1 yang mengambil mata kuliah perkembangan peserta didik. Teknik pengumpulan data yang digunakan menggunakan tes dan non tes. Analisis data yang digunakan adalah analisis kualitatif dan kuantitatif. Penelitian dan pengembangan ini menghasilkan digital book yang digunakan pada mata kuliah Perkembangan Peserta Didik berbasis Team based learning di era society 5.0 masuk ke dalam kategori valid dengan rata-rata validasi perangkat pembelajaran memperoleh nilai 0,8. Simpulan penelitian ini yaitu perangkat pembelajaran tersebut layak untuk diujicobakan kepada mahasiswa selama perkuliahan berlangsung. Implikasi penelitian ini media digital book yang mengintegrasikan model team based learning dapat menunjang proses perkuliahan, sehingga mampu memberikan bekal keterampilan bagi mahasiswa.*

## ABSTRACT

The independent campus policy has yet to be prepared thoroughly and correctly as the system is still partial, making it difficult for universities to implement. The Student Development course needs a digital book that integrates the team-based learning model in the era of Society 5.0. This development research aims to create a digital book for student development courses based on Team-based learning in the era of Society 5.0. The stages in this development research are based on the Borg & Gall model. The research subjects were 1st-semester students taking student development courses. The data collection techniques used were tests and non-tests. Qualitative and quantitative analysis were used in the data analysis. This research and development resulted in the digital book used in the Student Development course based on Team-based learning in the era of Society 5.0 being included in the valid category with an average learning device validation score of 0.8. This research concludes that this learning tool is suitable for testing students during lectures. This research implies that digital book media, which integrates the team-based learning mode, can support the lecture process and provide students with skills.

## 1. INTRODUCTION

In the era of Society 5.0, a person must have skills and abilities, including problem-solving, critical thinking, communication, collaboration, creativity, and innovation (Islam et al., 2021; Rojas et al., 2021). The scope of higher education requires students to be equipped with various 21<sup>st</sup>-century skills so that they can compete or survive. In addition to these abilities, they are also required to search, manage, present information, have collaboration skills, and apply the information and technology obtained (Hidayat & Utami, 2019; Taufiqurrahman, 2023). 21<sup>st</sup>-century skills and literacy that include basic skills as provisions for students. Learning aims to welcome the era of Society 5.0 in higher education by implementing an independent campus curriculum (Huang et al., 2022). Through the independent campus policy, universities must design and carry out innovative teaching and learning processes (Leng et al., 2022; Vhalery et al., 2022). This innovative learning is intended so that students can achieve optimal learning outcomes. The

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independent campus policy provides freedom for students to take credits outside of their study program with the provision that credits are taken for three semesters which can be taken either from one university or outside of the university. It is hoped that the independent campus policy can produce civilized Indonesian people who can contribute to the welfare of the nation's life and change the quality of Indonesian education through acceleration. In addition, Indonesian people are knowledgeable, professional, and competitive in building the nation.

The current reality is that modern learning activities are increasingly using a structured learning approach. What is more, is giving a lot of independent learning assignments while still being guided through academic consultations. The learning model contains the approaches, methods, strategies, and learning techniques. Each model has unique characteristics (Wong et al., 2017; Zou et al., 2021). One is syntax, which plays an important role in learning about sustainability. Syntax means standard stages that must be passed when implementing a learning model. Syntax should be reflected in the stages of learning that are specifically detailed in the core activities of teaching and learning. Universities have an important role in motivating and providing character-building for their students. Untidar, as a state university that is part of the Ministry of Education and Culture & Ristekdikti, inevitably has to implement the independent campus policy in stages. This policy presents a big challenge for Untidar in developing rapidly and improving the institution's quality. At the practical level, one of the developments is in course learning design. Student development is a faculty course that applies at FKIP Untidar. Each study program is required to organize learning for this course.

The Student Development course has yet to have a digital book that integrates the team-based learning model in the era of Society 5.0. The independent campus policy has yet to be prepared completely and correctly as a system that is still partial, making it difficult for universities to implement it. The campus as a system is entropic. This means that changing one campus component will affect other campus components. If we think systematically, what should be changed first is the goal and then the efforts taken to achieve the goal. One way to achieve the goals of the independent campus curriculum is by changing the learning design to suit the demands of the society 5.0 era. Untidar, in welcoming the society 5.0 era, is a super smart society that is part of the community and is needed in various areas of life. Existing technology will help improve the quality of life and develop sustainably (Islam et al., 2021; Taufiqurrahman, 2023). Efforts to fulfill this require learning that uses strong technological capabilities. In addition, there needs to be competent human resources in the learning sector to carry out their professional duties digitally and contribute to providing optimal student services

Team-based learning is one way to overcome problems with learning designs based on the independent campus policy. Team-based learning is a learning process that facilitates students to be active and interactive in solving problems in student development courses (Nursulistyo et al., 2021) (Monoarfa et al., 2023). Team-based learning has a unique characteristic, namely the formation of teams to solve problems, with each team solving problems independently (Oktaviani et al., 2022; Sari & Fadillah, 2023). The teaching and learning process occurs with student activeness in solving problems while developing and optimizing their professional competence (Carpenter et al., 2022). Team-based learning aims to develop students' critical and analytical thinking skills (Dave Silberman et al., 2021). In addition, students can also develop interactions and cooperation and be able to respond to problems that arise (Jamieson et al., 2021). Student involvement increases in preparing themselves to follow class learning and there is an increase in their learning outcomes.

The main focus in team-based learning is on the team-based learning (Green & de Bodisco, 2020; Zhang et al., 2023). This is because the team-based learning method can provide increased learning in teamwork, and students are very actively involved during the learning process. Through this model, students are required to be active in participating in learning and can solve existing problems. Students obtain new information through discussion. There is an exchange of information between students so that students are responsible for themselves (Muslim et al., 2021). In addition, the Semester Learning Plan (RPS) development needs to include applying a learning model in which the lecturer's activities are reflected through the syntax of the learning model that has been determined. Likewise, student activities should reflect the behavior and learning interaction model's implementation requirements. Lecturers who develop lesson plans should have an adequate understanding of various learning models so that the application in learning is appropriate and effective and the learning objectives are achieved (Haryati, 2016). Previous research findings stated that team-based learning is more effective than conventional learning, often called teacher-centered learning (Carpenter et al., 2022; Dave Silberman et al., 2021). Digital books on macroeconomics material are suitable for use as complementary learning resources in macroeconomics lectures (Muslim et al., 2021). This development research aims to create a digital book for student development courses based on Team-Based Learning in the Society 5.0 era.

## 2. METHOD

This research was designed using a research and development approach. The purpose of development research is to produce a certain product and continue by testing the effectiveness of the product (Sugiyono, 2010). Research and development is a process applied to the development and validation or testing of a particular product in the field of education. The product developed in this study is a digital book. The conceptual model is used (Borg & Gall, 1983). In its implementation, in general, the research is divided into two stages: conducting research and collecting information to design and develop digital book products and testing on limited trials in the field. The method used in this study is to use ten steps of research and development (Borg & Gall, 1983). Based on these ten stages, modifications were made into seven stages to adjust to the research context presented in Figure 1.

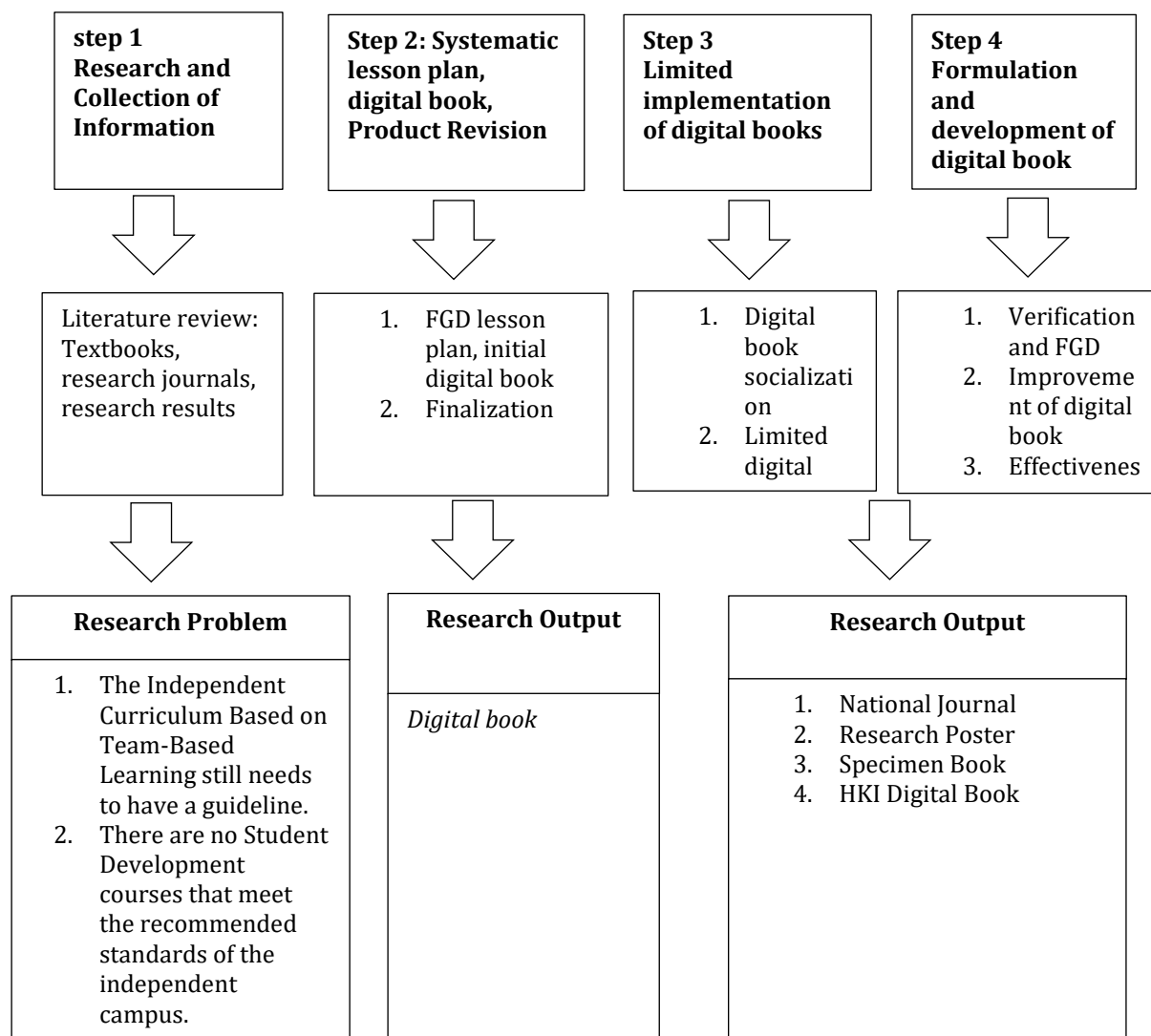


Figure 1. Research and Development Design

The subjects of this study were first-semester students of the Science Education, Mathematics Education, and English Education Study Programs at FKIP-Tidar University who took the student development course in the 2023/2024 academic year. Purposive sampling was used to determine the research subjects. The data collection techniques used were tests and non-tests. The test data collection technique was chosen to determine students' understanding of the student development course material based on team-based learning in the era of Society 5.0. At the same time, non-tests include questionnaires, observations, validation entries, and attitude scales. The data obtained were entries and notes from the validator on the validation sheet instrument collected based on validation by experts and FGD. The validation contents include content quality, presentation techniques, language, digital book design, digital

book functions, team-based learning, and the up-to-dateness of digital book materials. The validation grid for learning devices is presented in [Table 1](#).

**Table 1. Learning Device Validation Grid**

No.	Instrument	Assessment Aspects	Criteria
1	Lesson Plan	1. Quality of lesson plan content	a. Accuracy with lesson plan format
			b. Clarity of content
			c. Clear determination of student abilities
		2. Presentation techniques	d. Clear formulation of indicators
			e. Clarity of study materials
			f. Clarity of use of team based learning methods
			g. Suitability of learning resources
			h. Time allocation according to SKS
			i. Suitability of learning experiences with indicators and final abilities
2	Initial Draft of Digital Book	1. Digital book design	a. Updates to lecture materials according to the Society 5.0 era
			b. Clarity of integrated material studies team-based learning
			c. Student learning interactivity
		2. Digital book function	d. Student learning communicativity
			e. Attractive digital book display
			a. Accuracy of PUEBI
		3. Presentation of Team based learning	b. Effective and efficient use of language
			c. Standard language, easy to understand, appropriate to ability level, communicative, and interactive
			a. The general appearance of the digital book is attractive
4. Updates on digital book materials	b. Selection of fonts and font sizes		
	c. The contents of the digital book are proportional		
	d. The suitability of the layout placement in the digital book		
	e. The determination of the color selection		
	a. Facilitate students in receiving lecture materials		
	b. Facilitate educators in lecture activities		
2	Initial Draft of Digital Book	1. Digital book design	c. Have an appeal
			d. Practicality and ease of use
			a. Study of material in the digital book integrated with team-based learning
		2. Digital book function	b. Accuracy of Team based learning stages
			c. The entire contents of the digital book are part of team based learning
			a. The substance of the lecture material in the digital book is up-to-date
		3. Presentation of Team based learning	b. The entire study material is on the learning needs of students
			c. The presentation of the study material is coherent and clear
			a. The substance of the lecture material in the digital book is up-to-date
4. Updates on digital book materials	b. The entire study material is on the learning needs of students		
	c. The presentation of the study material is coherent and clear		
	a. The substance of the lecture material in the digital book is up-to-date		

The validation results were then calculated and analyzed using V-Aiken which obtained the average value for each validator. The V-Aiken value ranges between 2 - 7 (Azwar, 2012). The results of this calculation are used as a reference to improve learning devices. This is done to obtain learning devices that are by the objectives. Data in the form of questionnaire results were obtained by distributing questionnaires to students after learning using digital books. The questionnaire contains the scores of the pretest (trial) and posttest (final test) results and attitude parameters. The grid of attitude parameters is presented in [Table 2](#).

**Table 2. Attitude Parameter**

No.	Question
1	The material presented in the digital book is clear and easy to follow.
2	The material presented is relevant to the lecture indicators.
3	The presentation of interactive and communicative material
4	The material in the digital book and integrated team based learning is interesting.
5	The entire study of the material encourages students to learn.
6	The presentation of the entire digital book is based on team based learning.
7	Effective and efficient use of words and language

Data acquisition is analyzed using qualitative analysis. Qualitative analysis is a data analysis technique that contains three activity flows, namely data reduction, data presentation, and determining conclusions or data verification simultaneously. Data reduction is useful in recording various things that are essential and relevant to the research topic, making report summaries, and compiling them systematically based on certain categories and classifications. Meanwhile, data presentation is used to create a presentation of a collection of information compiled and formed in a simplified integration. In addition, selection is also carried out in the configuration to facilitate using the information in making decisions. Then, conclusions or verification are drawn after the data is presented systematically in tables or graphs. Qualitative analysis also uses triangulation techniques to test whether or not the digital book that has been developed is feasible to implement. The analysis in this study uses credibility, dependability, confirmability, and transferability techniques to maintain the findings' validity, reliability, and objectivity. Quantitative analysis was carried out using the t-test one group pretest-posttest design technique. The test was carried out to determine whether or not there was a difference between before and after being given treatment. The values obtained are the values before treatment (pretest) and after treatment (posttest), which will then be compared between the two and analyzed. The hypothesis formulated in this study is Ho1: There is no difference in student learning outcomes before and after the implementation of digital book student development with team-based learning in the era of society 5.0. Ho2 There is no difference in student responses before and after implementing digital book student development with team-based learning in society 5.0. This hypothesis is used to test the effectiveness of the digital book that has been developed.

### **3. RESULT AND DISCUSSION**

#### **Result**

At the product development stage, the team-based learning model is used. The first stage is research and information collection. The stages taken are collecting various information using literature reviews. Before conducting the literature review, various previous research results, textbooks, and scientific papers related to the focus of product development are collected. The second stage is the planning stage. The planning stage prepares various things in advance, namely collecting theories about student development, theories containing team-based learning, and theories about the era of society 5.0, conducting theoretical studies on products to be developed, namely regarding digital books, compiling lesson plans, making systematic digital book plans, analyzing the arrangement of digital books to be developed. The next stage is the pre-product planning stage (Develop Preliminary Form Product), which involves creating an initial design for developing a digital book product. The next stage is the preliminary product testing stage (Preliminary Field Testing), which implements the digital book developed for students and conducts consultations through Focus Group Discussions (FGD) with experts. Product revision stage (Main Product Revision). At this stage, revisions are made to the product that has been developed, with the provision that revisions can be made if the data has been analyzed. A temporary conclusion is obtained, namely improving the product that has been tested previously. The results of the conclusion can be used as a reference to determine whether the product requires revision. In addition, it is also necessary to include the truth and consider whether the product that has been tested is more effective than the previous product. Based on the description, this stage includes (1) reviewing input and suggestions from experts and practitioners and (2) re-arranging the initial product design that has been developed based on the results of the first field test.

Final Product Revision stage: This stage is the revision stage and the final stage of product development. Product revision is based on the results of the second field test data analysis. In the first stage, identify the weaknesses and deficiencies of the product developed operationally. This is done by examining each product component. Furthermore, in the second stage, the deficiencies of each product component must be improved and fixed. In the third stage, product reorganization is achieved by compiling product



components, which are adjusted to real conditions in the field to become the final product. After revision, the final product is a digital book. In the dissemination and implementation stage, the final development into a final product is implemented at FKIP Untidar. Then, the product is disseminated to stakeholders. The dissemination stage goes through the steps of compiling research reports, disseminating research results with scientific journals and seminars, and publishing products in printed books. Two experts carry out the validity of the learning device, and a focus group discussion is conducted, which includes the quality of content, presentation, use of words and language, and the up-to-dateness of the digital book material. The validation results are used as a basis for improving the learning device to obtain the final learning device. The results of the validity of the learning device are presented in [Table 3](#).

**Table 3. Results of Learning Device Validity**

Instrument	V-Aiken's Score	Category
Lesson Plan	0.85	High
Initial Draft of Digital Book	0.85	High

Based on [Table 3](#), the average validation results for the lesson plan and initial draft of the digital book obtained a value of 0.85 and were categorized as high, indicating that the learning device was valid and worthy of being tested in learning activities.

**Discussion**

This study aims to develop, analyze, and produce a digital book for student development courses based on team-based learning in the era of society 5.0. The learning tools produced consist of lesson plans and initial drafts of digital books. This research and development focuses on the quality of learning tools considering the independent campus policy. The independent campus policy has yet to be formulated completely and correctly as a partial system, making it difficult for universities to implement. The campus as a system is entropic. This means that if one campus component is changed, it will affect other campus components. If you think systematically, what should be changed first is the goal and then the efforts taken to achieve the goal. One of them can achieve the goals of the independent campus curriculum, namely changing the grand design of learning by the demands of the era of society 5.0. The era of disruption is a phenomenon of the emergence of digital technology that changes people's habits from the real world to the virtual world. The most important thing that needs to be prepared in welcoming the era of Society 5.0 is the ability to solve problems with a humanist approach. This can be seen in the change in social function towards the function of information technology in various aspects of every life activity, including education. One of them is using online-based learning and teaching media, one of the apparent characteristics ([Satria Dewi Pandit et al., 2022](#); [Yulaika & Sakti, 2020](#)). Society 5.0 is an artificial intelligence that focuses on the human side related to all areas of life and is expected to become a new wisdom in the social order ([Rojas et al., 2021](#); [Taufiqurrahman, 2023](#)).

Students need learning materials using digital books because they are more innovative and digital books are not only in the form of writing but can be developed in the form of videos and animations so that students will feel happier while participating in learning activities ([Cun, 2022](#); [Dewi et al., 2021](#)). Educators have the skills to compile, create, and design teaching materials in electronic form and access online, namely digital books ([Cun, 2022](#); [Muslim et al., 2021](#)). Digital book development can make students understand the material presented better. A new challenge for humans facing the era of society 5.0 prioritizes technological capabilities. If society 4.0 is an era where anyone can access various information from the internet, then society 5.0 is an era where all technology becomes part of humanity. The widespread use of computers and the internet has triggered an increase in software development that has skyrocketed, the existence of tablets, which are the use of sophisticated computers, and the existence of digital book technology that has developed and experienced a shift from printed books to digital books ([Mifsud et al., 2021](#)). Digital books are the simplest type of digital book technology development, simply by transferring from printed books to books in electronic form that can be viewed on a computer ([Boucher & Young, 2023](#)).

A digital book is a virtual presentation of learning media books. The advantage of digital books is that obtaining them is very easy; you can search the internet using a laptop or gadget, and the desired book can be obtained quickly. Making digital books is easy and cheap; it only requires the Kvisoft flipbook Maker Pro application. Digital learning books have become more practical and interesting and can be read anywhere using a cellphone ([Handayani & Sundaryono, 2020](#)). The situation in the era of Society 5.0 can be seen from the changes in social functions towards information technology functions in every life activity in various aspects, including education ([Huang et al., 2022](#); [Indarta et al., 2022](#)). The use of online and software-based learning and learning media is one of the characteristics of Society 5.0. Then, the digital

book multimedia format allows the display of information in various forms, namely text, sound, images, videos, films, and other multimedia elements. Currently, the preparation of Digital books is only a transition from conventional books to digital, so digital books are needed that are composed of various multimedia elements such as containing text, images, videos, and others to make it easier for students to understand the concept of learning materials (Setiawan et al., 2018). This aims to make it easier for students to obtain information related to lecture materials.

The development of teaching materials is based on a model or approach that can provide facilities for students to compile understanding and knowledge related to material concepts to achieve learning objectives. The development of teaching materials is a process of creating an instructional system that is systematically, effectively, and efficiently structured to improve performance while solving student learning problems with a series of stages starting from problem identification and development to evaluation (Nenoliu et al., 2020; Wibisana et al., 2022). In the development of digital books, it is necessary to pay attention to the nature of the preparation of materials based on difficult materials that can be easily understood, as well as semi-concrete and even abstract materials that can be easily understood, emphasizing repeating materials to strengthen understanding, providing positive feedback so that students will receive reinforcement, providing motivation that is an effort to determine success in learning, providing practice questions and assignments to test one's abilities. Team-based learning is a learning strategy that includes group activities with students (Alias et al., 2015; Tang et al., 2020). These groups' formation is permanent at the beginning of learning (Green & de Bodisco, 2020; D Silberman et al., 2021). In addition, each group is responsible for team cohesion so that each individual's understanding can be achieved better. Team-based learning emphasizes critical thinking and student skill development.

Team-based learning has four important elements: group, accountability, feedback, and assignment design. Group formation must pay attention to three truly formed and managed components: group members must be adequate in solving problems, avoiding alliances that can disrupt team cohesion, and truly ensuring that each individual has an equal opportunity to develop. If students have formed a group, they have a responsibility to themselves and the team not to become an obstacle to group cohesion, including accountability. Feedback and assignment design also need to be done to facilitate students in developing their groups that specifically seek solutions to each problem and challenge. This finding is reinforced by the findings of previous research stating that the team-based learning model implemented to students received a positive response where each student felt challenged during the discussion, was able to think critically, and was able to solve existing problems (Green & de Bodisco, 2020; D Silberman et al., 2021). The process takes place through cooperation between group members to effectively build self-confidence. Thus, ideas to solve problems begin to emerge for a common goal. This shows that learning devices need to be adapted according to the times. With various conditions of the times that are increasingly changing, the learning needs of students as provisions for the world of work need to be changed. One of these changes is using learning devices in the current era. This research implies that the learning devices developed in this research and development have met the criteria for being suitable for lecture activities.

#### 4. CONCLUSION

The quality of the learning tools used greatly affects learning activities. The learning tools are worthy of being tested on students during lectures. A well-running lecture process supported by appropriate learning tools in this era of disruption can provide students with skills. These skills are needed when students enter the workforce. Based on the conclusions outlined, it is necessary to develop learning tools in other courses according to the needs and characteristics of students that are adjusted to environmental conditions so that students can more easily understand the material being taught. In addition, broader research is needed regarding learning tools, especially in the learning process that uses other methods.

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