



Collaborative- Based Physical Education and Sports Management Learning Media Teaching Style App In Assisting the Teaching Practitioner Program-Independent Campus

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Abstract

This research aims to develop Learning Media for Physical Education and Sports Management Based on a Collaborative Teaching Style App to Help the Independent Campus Teaching Practitioner Program. This research uses the Research and Development (R&D) method *which refers* to the 4D (*four-D*) research and development model, namely defining , designing , developing and *disseminating* . The developed *Collaborative Teaching Style App* -based learning media will be tested on students taking the Physical Education and Sports Management course, FKIP UNIB Physical Education Study Program. The research instruments used to collect data in this study used questionnaires and test techniques. There are three questionnaires that will be distributed in this research, namely a material expert questionnaire, a media expert validation questionnaire, and a student response questionnaire. The aim of distributing the questionnaire was to determine the feasibility of developing the learning media that the researchers created. The technical test is in the form of an evaluation which aims to determine the extent of students' understanding of the material after the *Collaborative Teaching Style App* -based learning media has been tested. As a result, the total score obtained from the combined validation of material experts, media and users was 139.5 or obtained an average score of 4.1, which means that the Learning Media for Physical Education and Sports Management is Based on *Collaborative Teaching Style App* in Helping Teaching Practitioner Programs. The Merdeka Campus that researchers developed is included in the category suitable for use in learning activities



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INTRODUCTION

Law of the Republic of Indonesia number 20 of 2003 concerning the National Education System in chapter II article 3, mandates that: national education functions to develop abilities and shape the character and civilization of a dignified nation in order to educate the life of the nation, aiming to develop the potential of students to become human beings. who have faith and devotion to God Almighty, have noble character, are healthy, knowledgeable, capable, creative, independent, and are democratic and responsible citizens.

Our national education is currently experiencing various kinds of problems. According to Asep Syamsul Bachri (2006: 1). quoting from UNESCO,

"The quality of education in Indonesia from 107 countries is at number 102, while for Asia out of 47 countries, our position is at number 41. Meanwhile, the quality of human resources from 175 countries, Indonesia is at number 112 and in Southeast Asia from 10 countries, we are in 7th placel. This picture reflects that the quality of education will influence the quality of human resources or vice versa.

The implementation of learning in the era of independent learning indirectly influences how the government, especially the Ministry of Education and Culture, establishes Independent Campus and Independent Learning policies in higher education . The concept of independent learning aims to provide freedom for students to

study outside campus. This means that students (students) are given the freedom to explore the knowledge they need. The application of this concept must be accompanied by sufficient technological readiness so that students' independence in exploring knowledge can be realized. One way of preparing this technology is by providing learning media that can be accessed anywhere and anytime by students.

The learning media provided is not only meaningful for improving the quality of learning but it will also be better if the media is close to students. Students in the current era are participants

Educate generation Z where they grew up in an era where the digital world is developing rapidly so that this generation is a generation that is literate with technology. The closeness of students to technological products such as gadgets requires educators to see opportunities in providing education, for example by developing learning media based on the Collaborative Teaching Style App.

Collaborative Teaching Style is a teaching method of constructing knowledge through interaction with others. In simple terms, it can be interpreted as a teaching method using collaborative teaching styles where there are practicums and practice for independent campus teaching practitioners. Collaborative teaching styles represent a shift from traditional teacher- or lecturer-centered teaching to student- or learner-centered learning in

college classrooms. In a collaborative setting, the lecturing/listening/taking notes process rarely occurs.

Advances in modern technology will certainly influence developments in the world of education, both related to the issue of providing education and the ease of obtaining learning resources or knowledge. As according to Hamalik, who has been quoted by (Azhar Arsyad, 2007) that the use of learning media in the learning process is able to generate new desires and interests in learning, generate stimulation and motivation in learning, and have psychological influences on students. Apart from arousing student motivation and interest, learning media can also help students improve understanding, facilitate data interpretation, present data in an interesting and reliable manner, and condense information.

There are several learning media that were created and developed as independent learning media that are not yet the best solution, so it is necessary to look for a choice or solution for learning media that is really good in order to support the learning process to be interactive, effective, interesting and fun. In this millennial era, learning is required to be able to create human qualities that do not only depend on verbal learning. Learning media can be used to suit the psychological conditions of the child's development and the characteristics of the subject. Inclined subjects rote or theoretical in its transfer, it may be enough just to use a guidebook. However, with learning that

tends towards practice, it certainly requires additional information and demonstration media. Effective and efficient learning media is certainly needed.

This Collaborative Teaching Style App-based learning media is made in a characteristic form that is able to simplify the learning and teaching process in this modern era as well as in the form of software with an interactive display so that students, teaching lecturers and teaching practitioner partners can enter the website system (E-Learning) to start learning, apart from being easily accessible, this media also has a simple operating system so that it can support the learning process of the independent campus - independent learning anytime, anywhere, and by any student. Collaborative Teaching Style-based learning media not only makes space and time more effective but also helps the learning process become more interesting and meaningful for students. Collaborative Teaching Style-based learning media is also able to make the learning process more efficient because every child nowadays is certainly not free from gadgets so that this process can make children more practical and make learning activities easier and teaching lecturers and teaching practitioners can more easily convey the learning.

Management learning is a process of achieving targets effectively and efficiently through planning, organizing, leading and controlling organizational resources. Management includes interactions between people

who serve as administrators and people who participate in physical education and/or people who are involved in the sports process. Management requires this but is also not limited to important things such as human resources, long-term plans, programming, facilities, budgets, marketing and public relations. This material covers the dimensions of management, and steps in checking whether we are using effective and efficient methods. The achievement targets in the Physical Education and Sports Management course will later become the pillars in other courses, therefore the foundation of this course must be strong.

This means that students must understand Physical Education and Sports Management and be able to simply apply it. Seeing the importance of the Physical Education and Sports Management course, innovation is needed in learning so that students are interested in exploring the material in this course. One of these innovations is to provide teaching media that is familiar to students, namely teaching material delivered through interactive media that attracts students' interest in learning. By presenting learning media for Physical Education and Sports Management based on the Collaborative Teaching Style, the learning process will not only feel interesting, easy to use, but also meaningful for students because the teaching lecturers and teaching practitioner partners join the website-based digital class.

One of the research that the researcher will carry out is on the subjects that will be included in the research, where the researcher develops learning media for Physical Education and Sports Management based on the Collaborative Teaching Style. The limited research on the use of Collaborative Teaching Style as a tool in developing learning media, especially in Physical Education and Sports Management courses is also the reason researchers want to conduct this research. The development of learning media based on the Collaborative Teaching Style makes it possible to achieve learning goals in the era of independent learning policies - independent campuses and allows for the creation of effective learning in Physical Education and Sports Management.

Research on developing learning media based on Collaborative Teaching Style in the Physical Education and Sports Management course will use the Research and Development (R&D) method. (Sugiyono 2011) states that development research is research that aims to produce certain products.

METHODS

The method used in research is *Research & Development* (R&D) (Sugiyono 2017). This method is a research method that aims to find, formulate, improve, develop, test the effectiveness of effective and meaningful products, models, methods/strategies/ways, services (Putra 2011). This research refers to the 4D

(four-D) research and development model. According to (Lawhon and Thiagarajan 1976) the 4D research and development model consists of 4 main stages, namely defining, designing, developing and disseminating.

Participants

The population of this study were all students of the Physical Education Study Program, FKIP UNIB. Meanwhile, the sample in this study were 6th semester students who took the Physical Education and Sports Management course, Physical Education Study Program, FKIP UNIB .

Sampling Procedures

The data in this research was collected using questionnaires and test techniques. There are three questionnaires that will be distributed in this research, namely the material expert questionnaire, the media expert validation questionnaire, and the student response questionnaire. The aim of distributing the questionnaire is to determine eligibility

development of learning media that researchers create (Gulo 2013). The technical test in the form of giving questions to students aims to find out the extent of students' understanding of the material after the Collaborative Teaching Style App-based learning media has been tested. .

Materials and Apparatus

Research instruments are tools used to collect research data. The instruments used are objective questions

and essays as well as questionnaires that researchers will distribute (Sugiyono 2017). The following is a grid of the instrument. For *assessment questionnaires by students*, the components assessed are *learning, materials, appearance of learning media, and their use* . Meanwhile, for *the expert assessment questionnaire*, the components assessed are *learning* (learning objectives, delivery of material, and evaluation) and *material* (relevance and selection of material). Next is *an assessment questionnaire by media experts*. The components assessed are *the appearance of learning media and its use*. The multiple choice test questions given to students to measure student understanding consist of 10 questions .

Procedures

The development of learning media for Physical Education and Sports Management based on *the Collaborative Teaching Style* consists of 4 main stages. The following is the flow of research procedures that the researcher will carry out .

1. Definition Stage (Define)

Activities in this stage are initial – final analysis, student analysis, material analysis, task analysis, and specification of learning objectives.

- a. Initial – final analysis At this stage the researcher seeks information regarding student characteristics including cognitive development, academic background, social and economic life background.
- b. Material Analysis This material analysis is the basis for preparing learning objectives. This material

analysis is also useful in determining the parts of the material that will be studied in the lesson.

- c. Task Analysis This task analysis is prepared based on basic competencies and achievement indicators in physical education and sports management material.
 - d. Specification of Learning Objectives The activity carried out by researchers at this stage is to translate basic competencies into indicators that are more specific and adapted to the results of material analysis and task analysis carried out previously.
2. Design Stage (Design)
The aim of this stage is to produce a learning device design. The results at this design stage are called initial drafts (draft I). Activities at this stage are:
 - a. Media selection At this stage the researcher determines the appropriate and appropriate media to present physical education and sports management material that is appropriate to the learning model used. Media selection is adjusted to learning objectives, student characteristics, teaching and learning strategies, time, media functions, and the lecturer's ability to use media.
 - b. Format selection At this stage the researcher chooses a format for designing content, selecting learning strategies and learning resources that are in accordance with the principles, characteristics and steps that are appropriate to the learning model used.
 - c. Initial design The initial design of the learning tools in this research includes the Learning Implementation Plan (RPP), Student Worksheets (LKM) and Learning Outcome Tests. Design

The resulting learning tools and learning outcome test instruments are called Draft I.

3. Development Stage (Develop)
The aim of the development stage is to produce a final draft of a good learning tool. Activities at this stage are:
 - a. Expert validation The results of the initial draft, namely draft I, were validated by the validator, and the revisions were used as a basis for improving the learning tools to obtain draft II.
 - b. Readability Test A readability test was carried out on several selected students and fellow lecturers to see whether the learning tools in the form of LKM, learning outcome test instruments and lesson plans could be read clearly and were easy to understand.
4. Dissemination Stage (Disseminate)
The aim of this stage is to carry out validation tests on learning tools that have been tested and revised, then distributed to the field

Design or Data Analysis

The data analysis technique used in this research is questionnaire data for material experts and media experts as well as student response questionnaires carried out with five assessment scales, where the highest score is 5 (*strongly agree*) and the lowest score is 1 (*disagree*). To calculate the total average score from each questionnaire, the formula is used: $X = \Sigma X / N$. The scores obtained are then converted according to the table reference below:

Table 4.1 Conversion of scores on the five scales. (source: Suartama, 2010)

Intervals mark	Category
$X > X_i + 1.8 S_{bi}$	Very Agree
$X_i + 0.6 S_{bi} < X \leq X_i + 1.8 S_{bi}$	Agree
$X_i - 0.6 S_{bi} < X \leq X_i + 0.6 S_{bi}$	Simply Agree
$X_i - 1.8 S_{bi} < X \leq X_i - 0.6 S_{bi}$	Not enough Agree
$X \leq X_i - 1.8 S_{bi}$	No Agree

If the design of the study is complex or the stimuli require detailed description, additional subsections or subheadings to divide the subsections may be warranted to help readers find specific information.

RESULT (Times New Roman 12)

Development Media Learning Management Education Physical And Sports Based *Collaborative Teaching Style App* In Assisting the Independent Campus-Teaching Practitioner Program

Development in the form of Physical Education and Sports Management Learning Media Based on *the Collaborative Teaching Style App* to Assist the Independent Campus Teaching Practitioner Program has been tested on 34 Physical Education students taking the Physical Education and Sports Management course. The results of distributing material expert questionnaires, media expert questionnaires, and student response questionnaires show that this Practical Learning Media Based on *the Collaborative Teaching Style App* is suitable for use in Physical Education and Sports Management learning activities. Apart from that, there were also trials carried out on students, the results of which showed an increase in

students' understanding of the teaching material for Physical Education and Sports Management after using the Android-based *Collaborative Teaching Style App* learning media application with the help of *the application* so that students got learning results with average grades. *Good* . The following is an explanation of the stages of research implementation using the *Research and Development (R&D) method* that researchers have carried out.

The stage of testing the Collaborative Teaching Style App learning media which had been validated by media experts and material experts was carried out on 3rd semester class A students taking the Physical Education and Sports Management course, the number of which was 32 students. Before testing, researchers held a discussion via Zoom to discuss procedures for using learning media. After that, the researcher sent a simulation link to make it easier for students to understand how the Collaborative Teaching Style App learning media is operated. Researchers also ask students to register via a Gmail account or any social media account to connect with the Collaborative Teaching Style App learning media assisted by the application.

This trial was carried out 4 times with variations in the level of difficulty of the questions and also the material. Even though the researchers produced 9 Collaborative Teaching Style App questions which came from 9 material chapters, the implementation of this trial only used 4 Collaborative Teaching Style App questions with varying levels of difficulty. This is due to limited time for collecting trial results. However, the 4 Collaborative Teaching Style App questions are a representation of the Physical Education and Sports

Management material. The four materials are 1) History of Physical Education and Sports Management Games, 2) basic techniques for Physical Education and Sports Management games, 3) facilities and infrastructure for Physical Education and Sports Management games, and 4) rules of Physical Education and Sports Management games. The following are the results of trials using the Collaborative Teaching Style App Learning Media for Physical Education and Sports Management among students .

Table 5.5. Media Trial Results

No	Type Material	Average score
1	History game Management Education Physical and Sports	81.44
2	Development Management Education Physical and Sports	83.02
3	Technique game Management Education Physical and Sports (Passing & Dribling)	79.3
4	Technique game Management Education Physical and Sports (Shooting & Catching)	75.8
Average		79.89

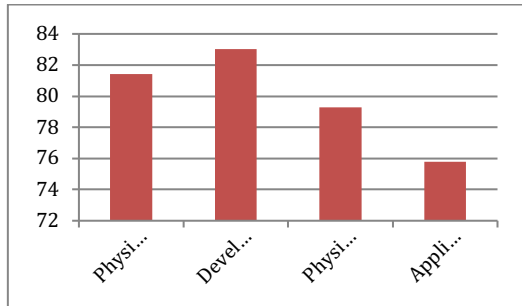
Table above is description results obtained in implementation test try in 32 students who took it eye studying Management Education Physical and Sports . Where each transformed material in form *Collaborative Teaching Style App* as a learning medium This consists of 20 questions *Collaborative Teaching Style App* per topic material . Seen that For material History game Management Education Physical and Sports obtained student amounting to 82.44 Material presented to in learning media in form This *Collaborative Teaching Style App* is material with level difficulty currently because material This quite familiar to student . There is proximity And characteristic *known* by student this is what makes it material This own difficulty with level currently .

Of course just matter This implications with results test try what you get student that is categorized Worthy

On test try second with material development Management Education Physical and Sports student in a way whole obtain mark with an average of 83.02 There is an increase results between test try First with trials second . This matter happen Because student Already get to know learning media This . Different with test try stage 1 where student new First time using application media , stage second student feel Already used to And also supported by level difficulty categorized material Worthy

Next is stage 3 and stage 4 trials where the difficulty level of the questions is in the high category. In stage 3 trials with material on basic techniques for Physical Education and Sports Management games (Passing & Dribling). The average score obtained by students on this material is Decent. Not much different from the stage 3 trial with material on basic techniques for Physical Education and Sports Management games (Passing & Dribling), the results of the trial in stage 4 show that students obtained an average score of 4 for a discussion of *basic techniques (Shooting & Catching)*. All trials carried out by researchers from trial phase 1 to trial 4 showed adequate results, namely that the four trials obtained an average score of 79.89. This means that the transformation of the Education Management material Physical and Sports in the form of Android-based *Collaborative Teaching Style App learning media* provides quite good

understanding for students or users. This is in line with the results of material and media validation, where the learning media that researchers created obtained results that were suitable for use in learning. The following are the results of trials conducted on 34 students in the form of a bar chart.



DISCUSSION

The research conducted by researchers shows that the development of the Android-based Collaborative Teaching Style App for Management of Physical Education and Sports learning media with the help of this application is suitable for use as a learning medium in Physical Education and Sports Management courses. This research and development adapts a learning model consisting of 4 main stages. However, based on the research objectives mentioned previously, it needs to be underlined that research adapting the 4D model was only carried out at the development stage. Where at this stage there are only product trials that have been validated by material experts and media experts on students. This research procedure consists of the definition stage, design stage and development stage.

The definition stage is a stage carried out to analyze needs related to users, namely lecturers who teach courses and also students who take Physical Education and Sports Management courses. Apart from analyzing needs, this stage also aims to determine trends in the use of learning media in courses in the Physical Education Study Program. Data from this needs analysis was obtained from a questionnaire that was answered by prospective users of the Collaborative Teaching Style App learning media which was distributed using Google Form. The results show a scale of 4.7 and 3.4 from an average interval of at least 3. This means that developing Android-based Collaborative Teaching Style App learning media is feasible.

Making simple media using the help of an Android application for learning media and also a fast distribution flow to students and the hope of a more interesting and interactive learning situation for students using online Collaborative Teaching Style App media. The conclusion is that the Android-based Collaborative Teaching Style App learning media is needed for development. Apart from that, from the needs analysis by giving 8 questions to students as part of media users, it can be concluded that there is great interest from students in using learning media in the form of Collaborative Teaching Style App games where the games are packaged in Android technology so that students become more interested and feel better.

embraced by technological adjustments in the generation Z era .

The design stage is carried out with the help of an application. The stages that the researcher carried out in this stage were selecting the material, designing the question items, and finally designing the appearance. Researchers chose Physical Education and Sports Management with the aim of arousing student interest in the game material. The combination of classical material with technology is the key so that students become more enthusiastic in studying Physical Education and Sports Management games. Next is the question item design stage where the main source of material that the researcher will transform into the form of statement questions and Collaborative Teaching Style App questions is from the book Physical Education and Sports Management. The final stage is the stage of designing the Collaborative Teaching Style App box based on the questions that have been created. At this development stage, researchers are assisted by the application. The results are then distributed to students in the form of a link via any social media. Users just have to click on their respective Android displays and then the Collaborative Teaching Style App game will appear which is a transformation of Physical Education and Sports Management material. The results of this media preparation are then validated by media experts as well as material experts and learning media users. Overall, the

results of the three validations are summarized in the table below :

Table 5.7 Results Media Eligibility

No	Aspect Evaluation	Amount Score	Average Score	Category
1	Evaluation expert material	65	4.06	worthy
2	Evaluation media expert	23	3.8	worthy
3	Evaluation user	51.5	4.29	Very worthy
TOTAL		139.5	4.1	Worthy

Based on the table above, it can be seen that material expert validation was carried out to see the suitability of the questions presented as material transformations. This validation is carried out by giving a questionnaire to the material expert validator. This questionnaire contains 16 statements which are grouped into 3 aspects, namely the question material aspect, language aspect and implementation aspect. Overall, the material aspect of the questions received an average score of 4.06, which means it is in the category suitable for use as learning media .

Furthermore is validation carried out by purposeful media expert For evaluate appropriateness from existing media researcher for . Distributed questionnaire to media expert consists from 1 aspect with 6 items statement . The result obtained score of 3.8 which means this media *worthy* used in learning . After done validation by media expert and expert material stages furthermore is test try learning media *Collaborative Teaching Style Management App Education Physical and Sports* to 34 students as user . Test try done 4 times with 4 materials varies level the difficulty . As for material These are 1) History game Management

Education Physical and Sports 2) Development Management Education Physical and Sports, 3) Physical Education Management Courses or , 4) Physical Education Management Courses or . By whole results test try show the average student earns value 79.89 which means It means transformation material Management Education Physical and Sports to in form of learning media *Collaborative Teaching Style* Management App Education Physical and Sports Android based provides sufficient understanding Good for student or user .

After done test try furthermore researcher spread questionnaire containing response student on learning media *Collaborative Teaching Style* Management App Education Physical and Sports Android based . Questionnaire This consists from two aspect that is aspect learning And aspect display of learning media . By whole evaluation user on learning media *Collaborative Teaching Style* Management App Education Physical and Sports obtain a score of 51.5 or an average score of 4.29 which means for user that is students , this media categorized *very worthy* For used in activity learning . Total score obtained from combined validation expert materials , media, and user that is as big as 139.5 or obtain The average value is 4.1 , which means learning media *Collaborative Teaching Style* Management App Education Physical and Sports researchers develop enter to in category *worthy* used in activity learning .

Overall, the results obtained in this research state the feasibility of the learning media that the researchers developed. However, there are still limitations in implementing the development of *the Collaborative Teaching Style App* for Physical Education and Sports Management learning media. First, the experiment that the researchers carried out was only on one class, namely 34 people, of course the measurement of the results of the experiment could be said to be insufficient. Therefore, in the future, researchers hope that the distribution of the *Collaborative Teaching Style App* for Physical Education and Sports Management media will get the same good or even better response from users compared to users during the trial phase.

CONCLUSION

The conclusions that researchers can formulate from the development of the Android-based *Collaborative Teaching Style Learning Media App* for Physical Education and Sports Management are as follows:

1. This research and development adapts a learning model consisting of 4 main stages. However, it should be emphasized that research adapting the 4D model was only carried out at the development stage. Where at this stage there are only product trials that have been validated by material experts and media experts for students. This research procedure consists of the definition stage, design stage and development stage.
2. Overall, the total score obtained from the combined validation of material

experts, media and users is 139.5 or an average score of 4.1, which means that the Collaborative Teaching Style App for Physical Education and Sports Management learning media that the researchers developed is included in the category suitable for use in learning activities

REFERENCES

- Arifin, Arifin. 2017. —Strategi Manajemen Perubahan Dalam Meningkatkan Disiplin Diperguruan Tinggi. *EDUTECH Ilmu Pendidikan Dan Ilmu Sosial* 3 No 1 (1): 117–32.
- Azhar Arsyad, 2007. "Media Pembelajaran". Jakarta: PT Raja Grafindo Persada, , 15-16
- Azhar Arsyad. 2015. —Peran Media Pendidikan Dalam Meningkatkan Kemampuan Bahasa Arab Siswa Madrasah. *Jurnal Ilmiah Didaktika* 16 (1): 44.
- Candra Wijaya, Dr, and Muhammad Rifa'i. 2016. *Dasar Dasar Manajemen Mengoptimalkan Pengelolaan Organisasi Secara Efektif Dan Efisien. Perdana*. <http://repository.uinsu.ac.id/2836/>.
- Enayati, Fatemeh, and Abbas Pourhosein Gilakjani. 2020. —The Impact of Computer Assisted Language Learning (CALL) on Improving Intermediate EFL Learners' Vocabulary Learning. *International Journal of Language Education* 4 (1): 96–112. <https://doi.org/10.26858/ijole.v4i2.10560>.
- Gulo, w. 2013. —Metodologi Penelitian. *Gunadi, Goldie*. 2020. —Rancang Bangun Aplikasi Media Pembelajaran Mengenal Nama Hewan Dalam Dua Bahasa Berbasis Collaborative Teaching Style Menggunakan Thunkable. *Infotech: Journal of Technology Information* 6 (1): 35–42. <https://doi.org/10.37365/jti.v6i1.77>.
- Hansson, Lena, Lotta Leden, and Susanne Thulin. 2020. —Book Talks as an Approach to Nature of Science Teaching in Early Childhood Education. *International Journal of Science Education* 42 (12): 2095–2111. <https://doi.org/10.1080/09500693.2020.1812011>.
- Lawhon, Del, and Sivasailam; Thiagarajan. 1976. —Instructional Development for Training Teachers of Exceptional Children: A Sourcebook. *Journal of School Psychology* 14 (1): 75. [https://doi.org/10.1016/0022-4405\(76\)90066-2](https://doi.org/10.1016/0022-4405(76)90066-2).
- Noor, Juliansyah. 2017. *Metodologi Penelitian*. Jakarta: Perpustakaan Nasional. Putra, Nusa. 2011. *Research & Development*. Jakarta: Raja Grafindo Persada.
- Sugiyono. 2011. *Metode Penelitian Kuantitatif, Kualitatif, Dan R&D*. Bandung: Alfabeta.
- . 2017. *Metode Penelitian Kuantitatif, Kualitatif, Dan R&D*. (2 st ed). Bandung: Alfabeta.
- Taufiqurrahman. 2010. —Strategi Pembelajaran Kooperatif (Cooperative Learning Strategic). *Fitrah Jurnal Studi Pendidikan* 2 (1): 1–17. <https://doi.org/https://doi.org/10.47625/fitrah.v2i1.152>.
- Wulandari, Dania Ayu, Hari Wibawanto, Agus Suryanto, and Agus Murnomo. 2019. —Pengembangan Mobile Learning Berbasis Collaborative Teaching Style Pada Mata Pelajaran Rekayasa Perangkat

Lunak Di SMK Sultan Trenggono
Kota Semarang.‖ *Jurnal Teknologi
Informasi Dan Ilmu Komputer* 6 (5):
577.
[https://doi.org/10.25126/jtiik.20196
5994](https://doi.org/10.25126/jtiik.201965994).