Development of English Teaching Materials With Flipped Learning Model In English Course

Farida Febriati [1*], Dirwan Jaya [2], Nurhikmah H [3], Sujarwo [4]

[1,2,3] *Educational Technology Study Program, Universitas Negeri Makassar, Indonesia*
[4] *English Education Department Study Program, Universitas Megarezky, Makassar, Indonesia*

A B S T R A K

Penelitian ini bertujuan untuk Menganalisis kebutuhan pengembangan bahan ajar, Mendesain bahan ajar, Memvalidasi validitas, kepraktisan keefektifan pengembangan bahan ajar pada Mata Kuliah Bahasa Inggris. Metode penelitian ini Research and Development yang difokuskan untuk mengembangkan media pembelajaran berbasis smartphone dan desktop. Model pengembangan yang digunakan mengacu pada model pengembangan S. Thiagarajan, et.al., yang terdiri atas 4 tahap yaitu: Define, design, develop, dan Disseminate. Penelitian ini dilakukan di Universitas Negeri Makassar dengan subjek penelitian 38 mahasiswa dan satu dosen. Teknik pengumpulan data menggunakan metode kualitatif dan kuantitatif (Wawancara, observasi, dokumentasi dan angket). Bahan ajar ini digunakan dengan model flipped learning yaitu mahasiswa mempelajari terlebih dahulu materi dalam bahan ajar sebelum melaksanakan pertemuan kelas secara langsung. Bahan ajar bahasa Inggris dikembangkan dan divalidasi oleh ahli materi dan ahli media, dengan hasil validasi materi dan validasi media sangat valid, sehingga bahan ajar bahasa Inggris dapat diuji cobakan dikelas untuk mengetahui kepraktisan dan keefektifan. Untuk mendapat penilaian kepraktisan diuji cobakan kepada kelompok kecil, kelompok besar dan respon dosen. Uji coba kelompok kecil memperoleh kategori sangat praktis sedangkan untuk uji coba kelompok besar memperoleh kategori praktis dan dilihat dari respon dosen dalam menilai bahan ajar memperoleh kategori sangat praktis. Sedangkan pada tingkat keefektifan bahan ajar dilihat dari tingkat kelulusan pada tes yang diberikan kepada mahasiswa dengan hasil >80 berada pada kategori sangat baik. Berdasarkan dari hasil yang ditemukan dapat disimpulkan bahwa bahan ajar praktis dan efektif digunakan dalam proses pembelajaran pada mata kuliah Bahasa Inggris..

A B S T R A C T

The study aims to analyze developing English teaching materials, todesign teaching materials to validate the validity and practicality of the effectiveness of developing teaching materials. The research method is Research and Development which focuses on developing smartphone and desktop-based learning media. The development model used S. Thiagarajan, et al., which consists of 4 stages: define, design, develop, and disseminate. The study was conducted at State University of Makassar with 38 students and one English lecturer. English teaching materials were used in English course to assist and facilitate the lecturer in learning process. The data collection technique used qualitative and quantitative methods (Interview, observation, documentation and questionnaire). English teaching materials were developed and validated by material experts and media experts with the results of material validation and media validation being very valid, thus could be tested in class to determine their practicality and effectiveness. In order to obtain a practicality assessment, it was tested on small groups, large groups, and lecturer's response. The small group trial obtained a very practical category, while the large group trial obtained a practical category, and based on the lecturer's response, it was obtained a very practical category. Meanwhile, the level of effectiveness of English teaching materials based on the passing rate on the tests given to students with the result >80 is in very good category. Based on the results discovered, it is concluded that English teaching materials are practical and effective in learning process

1. INTRODUCTION

The role of education is very important to produce quality and competent students in their fields. Education also has a very important goal in preparing students to develop and apply knowledge. However, learning activities are the core activities of the educational process. The success or failure of a lesson will be seen during the teaching and learning process because it will show how prepared the learner is with the materials and strategies that will be carried out while teaching so that what is conveyed can be understood by the learner and the objectives of the learning process can be achieved. In the process of constructing such as knowledge,

students are required to be able to compare the prior knowledge with the new knowledge that they have acquired (Sujarwo, et al, 2019).

Bishop & Verleger (2013) states that there are two related movements that are combining to change the face of education. The first of these is a technological movement that enabled the amplification and duplication of information at an extremely low-cost. So this opinion gives an important message that educational progress can be achieved, one of them and most importantly, through the development of technology. The use of technology, especially information technology, can facilitate the delivery of information widely and eliminate boundaries and difficulties when learning only relies on face-to-face in class (Nurhikmah et al, 2021 & 2022).

Language is something very important for human life. Language means communication, and without language people cannot communicate with others. In the era of globalization like now, English seems to have become a mandatory skill that must be possessed by students and professionals. Because English is an international language, which means that in international communication, we must use English. Not mastering English means not being able to communicate with the international community. In addition, most of the good literatures are in English and have not been translated into Indonesian.

Based on the data collection that has been carried out by researcher on May 16, 2020 with an English lecturer at the Educational Technology Study Program, Faculty of Education, UNM, found that English course is elective course and there are no adequate learning tools including syllabus, RPS and teaching materials to carry out teaching and learning activities. The English course is chosen as an elective course because most students do not have an interest in learning English.

Teaching materials are used by learners to facilitate the learning process (Kosasih 2021). In this research, researcher focused on the development of teaching materials. With the existence of teaching materials, it will save learning time, lecturer will be more focused as facilitators, learning will be more effective and teaching materials will become guidelines in learning. Also it is a series of media or mean used and prepared by lecturer and students in learning process at the classroom (Akhiruddin et al, 2019).

From what the researcher has found above, the Educational Technology study program needs to develop learning by utilizing technology that can be a learning solution that often occurs in English courses, ranging from problems of learning time and duration to the availability of qualified teaching materials. So that the Educational Technology Study Program is able to create quality learning in line with the demands of the world of work who need sufficient foreign language skills.

E-Learning is one of the inovations in the field of education that utilizes information technology. Various online learning models began to be developed. For example, blended learning, distance learning and flipped learning (McKnight et al. 2013). This online learning basically tries to innovate and change the paradigm in learning. Through e-learning students have the opportunity to study anywhere and anytime as long as they have access to the internet network. It is not possible for students to carry books everywhere. But it is very possible for students to carry their mobile phone or smartphone with them everywhere and use it to study anytime.

One of the online learning models that is currently being studied in educational research is flipped learning. The pioneers of flipped learning are Jonathan Bergmann and Aaron Sams, who studied Chemistry from Colorado in 2007. Flipped learning is learning that combines classroom meetings with online learning. According to Herreid & Schiller (2013) in flipped learning things that are usually done in class such as explaining material, giving assignments, exercises and homework are moved into online learning. The concept of the flipped classroom has generated considerable interest in the educational context in recent years, especially in higher education (Hwang et al, 2015; Long et al, 2017; Jensen et al, 2018; Mehring, 2018; Cheng et al, 2019; Shi et al, 2020).The flipped classroom is one of the innovative learning models that have appeared in language learning in the last decade (Reidsema et al, 2017; Namaziandost, E., & Çakmak, F. (2020; Mehring, J. 2018; Jensen et al, 2018; El Miedany, 2019; Lee et al, 2020; Feng et al, 2021; Abdullah et al, 2021).

Flipped learning model shows its potential effectiveness and success in teaching language knowledge and language skills. Hung (2015) found that both teachers and students have positive perceptions and attitudes that support this pedagogical approach. His research also reveals that flipped learning helps improve students' academic performance in general. Several other researchers such as Basal (2015) dan Engin (2014) in their researches also concluded that this approach has a positive impact on the performance and level of proficiency of learners in mastering language competencies. According to Al-Harbi & Alshumaimeri (2016) the application of flipped learning helps to overcome some common problems faced by English language learners including low levels of participation, communication and interaction opportunities as well as lack of feedback from teachers. In addition, this learning model maximizes time in the classroom for communication activities.

There are some relating previuos studies that have been conducted by other reseachers such as many professional development programs aim to improve student outcomes by enhancing teacher competencies and effective evaluation of these programs requires a clear delineation of the competencies to be gained. A competency model was developed to evaluate the impact of a teacher professional program that aimed to

improve teachers' ability to effectively implement technologically engaged modules in a flipped classroom setting (Barnard et al, 2020). This study is found that the academic achievement levels of the students in the flipped classroom model using ARCS motivation strategies were significantly higher than those of the students in the distance education classroom model and the traditional classroom model (Karabatak et al, 2020).

From the results of the research above, it is necessary to carry out an innovation in the field of education to support learning that integrates technology into the learning process. And The purpose of this research is to produce teaching materials in the form of media learning with a flipped learning model approach that it is student-centered learning which will integrate skill problem solving and independent learning of students.

2. METHOD

The development model used in this research is Research and Development (R&D). The development model used will be adapted to the 4-D development flow (Four-D Model) by Thiagarajan (1974). The flow of Thiagarajan's (1974) 4-D model development consists of 4 main stages, namely define, design, develop and disseminate. This model was chosen by considering a systematic sequence and is used in the development of teaching materials ajar (Zunaidah 2014). At the define stage, an initial analysis is carried out, namely student analysis, task analysis, concept analysis and formulation of learning objectives. At the design stage, the instruments are prepared, the selection of teaching materials, the selection of the format and the initial product design is carried out. The develop stage includes the expert assessment stage and development trials. The last stage is the disseminate stage. The disseminate stage is the stage of using teaching materials that have been developed on a wider scale, for example in other classes, in other schools, and by other learners.

This research was conducted at the Educational Technology Study Program, Faculty of Education, State University of Makassar which aims to produce teaching materials in the form of learning media with a flipped learning learning model approach that is student-centered learning that can be accessed online via a smartphone or desktop. The subjects of this study include content and construct validation test subjects by two experts, namely media expert and content or material expert and practicality test subjects involving one course lecturer and 21 students who program English course for the 2021-2022 academic year. as well as the subject of the effectiveness test. The subjects of this study were 2 validators consisting of 1 media expert and 1 content or material expert, odd semester students who program English elective courses and 1 lecturer of English course.

The following are the primary data in this study including data concerning:
1) Analysis of the need for the development of English teaching materials
2) Product validation questionnaire by experts
3) Product trial questionnaire in the field with a limited group

Secondary data is data obtained and collected by researchers from a variety of available sources, for example from survey reports, books, journals and others (Siyoto & Sodik, 2015). The secondary data from this research include data in the form of written documents that available in the Education Technology Study Program such as curriculum, textbooks, modules, and others etc. Likewise with the data about the description of the research location such as historical, geographical data, the condition of lecturers, students and study program infrastructure Education technology.

Primary and secondary data sources come from the results of observations and resource persons and various literatures (Sugiarto, 2017). Data sources in this research are as follows:
a. Experts for product validation
b. Student of Education Technology Study Program
c. Literature data related to this research.

The data collection technique in this development research uses qualitative and quantitative methods. According to Sugiyono (2008), the research method Combination is a research method that combines or combine quantitative methods and qualitative methods to use together in a research activity, so that the data obtained more comprehensive, valid, reliable and objective. As for the collection technique the data can be explained as follows: Interview, observation, documentation and questionnaire.

Data analysis was carried out to obtain an overview of the product generated. This development research uses two data analysis techniques, namely qualitative techniques and descriptive statistical analysis to analyze the data by describing and developing the data that has been collected from development results, validation results, teacher and student responses in the test design try to get the developed teaching materials.

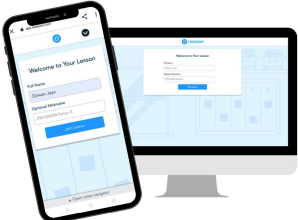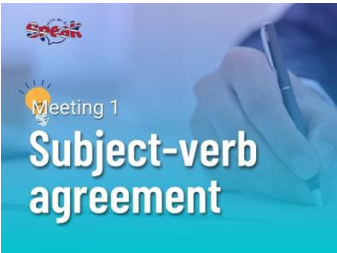## 3. RESULT AND DISCUSSION

Result

At the define stage by analyzing the need for developing English teaching materials with the flipped learning learning model, it was found that the results of the initial analysis obtained an overview of the curriculum and materials used in the Educational Technology Study Program, Faculty of Education, Makassar State University with KKNI and SN-DIKTI levels. Researchers also observed learning activities carried out by lecturers and students through google meet. The researcher found that the learning process was still teacher-centered and there was still a lack of student activity in responding to the learning process. Most of the students in synchronous learning via Google Meet do not activate their cameras. So as a teacher, in this case the subject lecturer did not know the progress of students in the learning process and the extent to which students have understood the learning material. Then the identification of student characteristics was used to find out what the student's character is like in learning and to find out what needs to be taught in English course.

Through the identification of student characteristics carried out at the Educational Technology Study Program, Faculty of Education, Makassar State University, 66 students were randomly assigned to English course via google form to provide an overview to researcher regarding English course. There are 17 questions that are filled in by students as respondents by choosing one of the "yes" or "no" columns. In question 5 which contains the effectiveness of learning during the Covid-19 pandemic, the percentage of students who answered "Yes" was 22.7% and 77.3% who answered "No". This indicated that the learning has taken place needs to be given a solution so that the learning process can run more effectively. Then at question 11, 12, and 13 which contain students' interest in learning using modules and also audio-visual media, it is obtained a percentage of 100% who answered "Yes". This is supported by the readiness of students who all answered "Yes" to the question of ownership of a smartphone or laptop to access teaching materials.
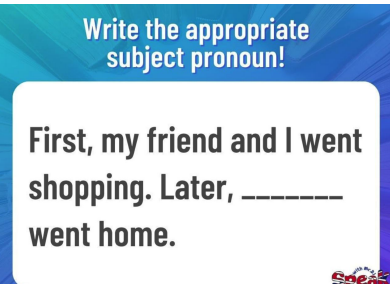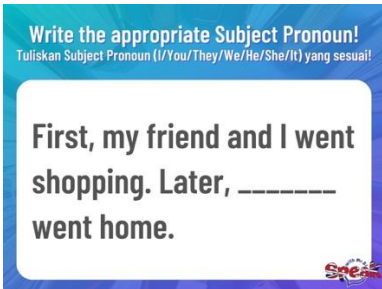
The second stage was design. At this stage, the sources for the development of English teaching materials are determined in the form of platforms and supporting facilities and infrastructure to run the products developed. The platforms that are prepared to develop English teaching materials were canva, imovie and nearpod. Content in the form of videos that explain the material to be studied is created by researcher and also curated from YouTube and other video platforms. These English teaching materials can later be used on mobile and also on a PC or laptop. Product development at this stage was the initial design with the planning in the form of an initial display called a storyboard. The results of the storyboard design are shown in table 4.2 below.

Table 4.2. Storyboard of English Teaching Materials

Diplay	Part	Description
https://bit.ly/bahasainggris-tp	Starting	Link to access English teaching materials
	First display of Teaching Materials on Nearpod	This display is used by students to identify their identities such as name, NIM before starting the teaching materials.
	Cover Display	It contains of meeting and title of topic.

The next stage was the development stage. This stage is the implementation stage of the product planning that has been carried out in the previous stage. The purpose of this stage was to produce a final product of English teaching materials that are suitable for use. The results of content and construct validity by experts obtained results with a percentage of 96% which indicates that English teaching materials are in the very valid category. Then the results of media validation by experts obtained a percentage of 91% which explained that English teaching materials were in the very valid category even though it was followed by several suggestions for improvement which are shown in table 4.5 below.

Table 4.5. *Revisi Validasi Bahan Ajar Bahasa Inggris*

Before	After	Description
		Complete the Students identity, study program, and university at the first part of media.
		Complete the instructions in Indonesian.

Before	After	Description
Nothing		Complete learning map so students can understand the teaching materials easily.

The next step was a practicality test conducted by lecturers and students to obtain data on the development of English teaching materials. This stage involved 1 lecturer in English course at the Makassar State University Education Technology Study Program and 21 students who have taken English course program for the 2021-2022 academic year at the Makassar State University Educational Technology Study Program. The results of student assessments of the development of English teaching materials in small group trials showed that the student responses of Makassar State University Education Technology Study Program obtained an average percentage of 85% from 3 small groups, which means that student responses are in the very practical category and based on the results of the English lecture respons got a percentage of 90%, so the practicality test of teaching materials is in the very practical category. Then it can be said that teaching materials could be used in the learning process.

The last step in the development stage was testing the effectiveness of open materials by testing learning outcomes which are measured using descriptive analysis. Effectiveness analysis is an analysis that functions to describe or provide an overview of the object under study through a sample of data as it is, without conducting analysis and making conclusions that apply to the public. The effectiveness of the data obtained from the effectiveness of student learning outcomes developed by researcher as a guide to determine student test results or exams using English teaching materials. The test was in the form of multiple choice questions with 10 numbers arranged into the quizizz platform. The tests that have been compiled into the quizizz platform were given to 21 students who are part of a large group trial before the students use the English teaching materials that have been developed. The test was given back to 21 large group students after the students had used the teaching materials. The results of student work showed that the average test results before studying teaching materials and after studying teaching materials have increased.

Discussion

The development of English teaching materials with the flipped learning model has gone through several tests to obtain valid, practical and effective teaching materials so that they can be applied in the learning process of English course at the Education Technology Study Program, Makassar State University with the flipped learning model. This development used the development model of Thiagarajan (1974). The 4-D development model consists of 4 main stages, namely Define, Design, Develop and Disseminate. The development of English teaching materials has gone through several tests to obtain valid, practical and effective teaching materials so that they can be applied in the learning process of English courses at the Makassar State University Education Technology Study Program with the flipped learning model.

The validity test was carried out by two experts consisting of one material expert and one media expert. The validators assess the English teaching materials that have been produced. Assessment of English teaching materials was carried out by filling out a material assessment questionnaire for the material validator, and a media questionnaire for the media validator. The results of the assessment of the 2 validators showed that the results of the material validator and media validator were in the very valid category (Kaplan and Maxwell 2005). The next part was practicality test which is a test to get better results (Arikunto 2021). The use of student response questionnaires is a benchmark to see the feasibility of the practical aspect in accordance to Lowery (2005) statement that the results of student responses are a description of the learning inputs that have been received by students.

There are some research results that have been conducted such as from Öztürk, M., & Çakıroğlu, Ü. (2021) found that self-regulated learning strategies positively affected the development of foreign language skills in the flipped classroom model and having significant difference in favor of the group working with the platform including self-regulated learning strategies outperformed in speaking, reading, writing, and grammar test scores (Öztürk et al, 2021). In line with the other study found that the utilization of flipped classroom in various disciplines is mainly advocated to promote students' engagement, metacognition, attitude, performance,

understanding, and achievement, as well as other learning outcomes. The key challenges of this method, shared across all disciplines, were devoted to the length of the video/digital materials and time required for instructors to prepare the learning materials and for students to master it. Recommendations for policy makers and other crucial insights for the future studies were highlighted (Al-Samarraie et al, 2020). This study is supported by the other study found that Using an established method for model development research, a theoretically constructed initial model was iteratively improved and underwent internal and external validation through model usability tests, expert review, and field evaluation. The implementation of an algebra class in a Korean university designed by the final model resulted in significant increases in the maturity of mathematical views, quality of reflections, and satisfactions of students. Features of the model are discussed, along with theoretical and practical implications and suggestions for further research (Lee et al, (2017).

The results of the learning evaluation show that the use of English teaching materials has a positive impact on students. Although the results of student tests before and after using teaching materials were not very significant, the English teaching materials that had been accessed by students became the initial capital for further discussion in virtual face-to-face classes. This is in line with the principle of the flipped learning learning model where classes are usually given face-to-face in the flipped learning model, the material is given independently outside the classroom and then after students have studied it first and have initial knowledge of the material to be studied, they are brought into face-to-face classes for further discussion if they have problems in independent learning (Bergmann and Sams 2014). In line with the results of research conducted by Cucus, Aprilinda, and Endra (2016), it is shown that the use of media in e-learning containing multimedia can improve student learning outcomes. So that English teaching materials are expected to help the learning process to improve student learning outcomes and solve problems that exist in learning conditions during the Covid-19 pandemic.

4. CONCLUSION

The level of validity of English teaching materials with the flipped learning model is in the very valid category, so that the learning outcomes using these teaching materials can be said valid. The level of practicality of English teaching materials that have been tested on subject lecturers and also students of the Education Technology Study Program is in the practical category. The results of the learning evaluation get good results which also have a good effect on educator and learners.

5. REFERENCES

Abdullah, M. Y., Hussin, S., Hammad, Z. M., & Ismail, K. (2021). Exploring the effects of flipped classroom model implementation on EFL learners' self-confidence in English speaking performance. In Recent Advances in Intelligent Systems and Smart Applications (pp. 223-241). Springer, Cham. DOI: 10.1007/978-3-030-47411-9_13

Akhiruddin, A., & Sujarwo, S. (2020). The Implementation Of Instructional Materials Development Based On Inside Outside Circle (IOC) For Students' Sociology Education Of Megarezky University. Jurnal Etika Demokrasi, 5(1), 86-94. DOI: https://doi.org/10.26618/jed.v5i1.3041

Al-Harbi, Sarah S., and Yousif A. Alshumaimeri. (2016). "The Flipped Classroom Impact in Grammar Class on EFL Saudi Secondary School Students' Performances and Attitudes." *English Language Teaching* 9(10):60–80. https://eric.ed.gov/?id=EJ1113506

Al-Samarraie, H., Shamsuddin, A., & Alzahrani, A. I. (2020). A flipped classroom model in higher education: a review of the evidence across disciplines. Educational Technology Research and Development, 68(3), 1017-1051.). https://doi.org/10.1007/s11423-019-09718-8

Arikunto, Suharsimi. 2021. *Dasar-Dasar Evaluasi Pendidikan Edisi 3*. Bumi Aksara.

Barnard, M., Dehon, E., Compretta, C., Notebaert, A., Sparkmon, W., Meyer, E., ... & Rockhold, R. (2020). Development of a competency model and tailored assessment method for high school science teachers utilizing a flipped learning approach. Educational Technology Research and Development, 68(5), 2595-2614. https://doi.org/10.1007/s11423-020-09782-5

Basal, Ahmet. (2015). "The Implementation of a Flipped Classroom in Foreign Language Teaching." *Turkish Online Journal of Distance Education* 16(4):28–37. https://doi.org/10.17718/tojde.72185

Bergmann, Jonathan, and Aaron Sams. (2014). *Flipped Learning: Gateway to Student Engagement*. International Society for Technology in Education. https://books.google.com/books?hl=id&lr=&id=r4OZCgAAQBAJ&oi=fnd&pg=PR9&dq=Flipped+Learning:+Gateway+to+Student+Engagement.&ots=ZtL70pXxL1&sig=RmChu5yzMtY4pkv87rj1sKIoGII

Bishop, Jacob Lowell, and Matthew A. Verleger. (2013). "The Flipped Classroom: A Survey of the Research." Pp. 1–18 in *ASEE national conference proceedings, Atlanta, GA*. Vol. 30. DOI 10.18260/1-2--22585

Cheng, L., Ritzhaupt, A. D., & Antonenko, P. (2019). Effects of the flipped classroom instructional strategy on students' learning outcomes: A meta-analysis. Educational Technology Research and Development, 67(4), 793-824. DOI https://doi.org/10.1007/s11423-018-9633-7

Cucus, Ahmad, Yuthsi Aprilinda, and Robby Yuli Endra.(2016). "Pengembangan E-Learning Berbasis Multimedia Untuk Efektivitas Pembelajaran Jarak Jauh." *Explore: Jurnal Sistem Informasi Dan Telematika (Telekomunikasi, Multimedia Dan Informatika)* 7(2). *DOI:* http://dx.doi.org/10.36448/jsit.v7i2.765

El Miedany, Y. (2019). Flipped learning. In Rheumatology Teaching (pp. 285-303). Springer, Cham. DOI: 10.1007/978-3-319-98213-7_15

Engin, Marion. (2014). "Extending the Flipped Classroom Model: Developing Second Language Writing Skills through Student-Created Digital Videos." Journal of the Scholarship of Teaching and Learning 14(5):12–26. 10.14434/josotlv14i5.12829. *DOI Link* 10.14434/josotlv14i5.12829

Feng, H., & Wang, J. (2021). Innovations in flipping the language classroom: theories and practices: edited by Jeffrey Mehring and Adrian Leis, Singapore, Springer, 2018, xviii+ 339 pp., $109.00 (ebook), ISBN 978-981-10-6968-0. https://doi.org/10.1080/10494820.2021.1884885

Herreid, Clyde, and Nancy Schiller. (2013). "Case Studies and the Flipped Classroom." *Journal of College Science Teaching* 42:62–66. https://www.jstor.org/stable/43631584

Hung, Hsiu-Ting. (2015). "Flipping the Classroom for English Language Learners to Foster Active Learning." *Computer Assisted Language Learning* 28(1):81–96. https://doi.org/10.1080/09588221.2014.967701

Hwang, G. J., Lai, C. L., & Wang, S. Y. (2015). Seamless flipped learning: a mobile technology-enhanced flipped classroom with effective learning strategies. Journal of computers in education, 2(4), 449-473. DOI https://doi.org/10.1007/s40692-015-0043-0

Jensen, J. L., Holt, E. A., Sowards, J. B., Heath Ogden, T., & West, R. E. (2018). Investigating strategies for pre-class content learning in a flipped classroom. Journal of Science Education and Technology, 27(6), 523-535. DOI https://doi.org/10.1007/s10956-018-9740-6

Kaplan, Bonnie, and Joseph A. Maxwell. (2005). "Qualitative Research Methods for Evaluating Computer Information Systems." Pp. 30–55 in *Evaluating the organizational impact of healthcare information systems*. Springe*r. DOI: 10.1007/0-387-30329-4_2*

Karabatak, S., & Polat, H. (2020). The effects of the flipped classroom model designed according to the ARCS motivation strategies on the students' motivation and academic achievement levels. Education and Information Technologies, 25(3), 1475-1495. https://link.springer.com/article/10.1007/s10639-019-09985-1

Kosasih, E. (2021). *Pengembangan Bahan Ajar*. Bumi Aksara.

Lee, J., Lim, C., & Kim, H. (2017). Development of an instructional design model for flipped learning in higher education. Educational Technology Research and Development, 65(2), 427-453. DOI https://doi.org/10.1007/s11423-016-9502-1

Lee, Y., & Martin, K. I. (2020). The flipped classroom in ESL teacher education: An example from CALL. Education and Information Technologies, 25(4), 2605-2633. DOI https://doi.org/10.1007/s10639-019-10082-6

Long, T., Cummins, J., & Waugh, M. (2017). Use of the flipped classroom instructional model in higher education: instructors' perspectives. Journal of computing in higher education, 29(2), 179-200.

Lowery, Roger C. (2005). "Teaching and Learning with Interactive Student Response Systems: A Comparison of Commercial Products in the Higher-Education Market." in *annual meeting of the Southwestern Social Science Association, New Orleans, LA*. http://people.uncw.edu/lowery/swssa%20ms.pdf

McKnight, Patrick, Katherine McKnight, Kari M. Arfstrom, and Noora Hamdan. (2013). *The Flipped Learning Model: A White Paper Based on the Literature Review Titled a Review of Flipped Learning*. Flipped Learning Network/Pearson/George Mason University. http://www.*flippedlearning*.org/*review*

Mehring, J. (2018). The flipped classroom. In Innovations in flipping the language classroom (pp. 1-9). Springer, Singapore. DOI https://doi.org/10.1007/978-981-10-6968-0_1

Namaziandost, E., & Çakmak, F. (2020)*. An account of EFL learners' self-efficacy and gender in the Flipped Classroom Model. Education and Information Technologies, 25(5), 4041-4055). DOIhttps://doi.org/10.1007/s10639-020-10167-7*

Nurhikmah H, N. H., Hakim, A., Kuswadi, D., Sulfianti, S., & Sujarwo, S. (2021). Developing Online Teaching Materials for Science Subject During Covid-19 Era. Jurnal Pendidikan: Teori, Penelitian, dan Pengembangan, 6(8), 1198-1206. http://eprints.unm.ac.id/id/eprint/21986

Nurhikmah, H., Aris, M., Arismunandar, A., Sujarwo, S., & Sukmawati, S. (2022). Development of Local Content Teaching Material for the History of Wajo. Journal of Innovation in Educational and Cultural Research, 3(2), 264-270. DOI: https://doi.org/10.46843/jiecr.v3i2.82

Öztürk, M., & Çakıroğlu, Ü. (2021). Flipped learning design in EFL classrooms: implementing self-regulated learning strategies to develop language skills. Smart Learning Environments, 8(1), 1-20. DOI https://doi.org/10.1186/s40561-021-00146-x

Reidsema, C., Kavanagh, L., Hadgraft, R., & Smith, N. (2017). The Flipped Classroom. Practice and Practices in Higher Education. Ed. Springer. https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwiG8LOB9qf3AhWnTmwGHW1lCuoQFnoECAYQAQ&url=https%3A%2F%2Fwww.springer.com%2Fgp%2Fbook%2F9789811034114&usg=AOvVaw0achjsyqXVosZaQCqdc-Mk

Shi, Y., Ma, Y., MacLeod, J., & Yang, H. H. (2020). College students' cognitive learning outcomes in flipped classroom instruction: a meta-analysis of the empirical literature. Journal of Computers in Education, 7(1), 79-103. https://doi.org/10.1007/s40692-019-00142-8

Sujarwo, S., Akhiruddin, A., Salemuddin, M. R., Sabillah, B. M., & Sriwahyuni, S. (2019). The Application of Problem Solving Reasoning (PSR) in Improving Students' Metacognitive at the Twelfth Grade Students of SMAN 19 Makassar. International Journal for Educational and Vocational Studies, 1(2), 138-141. DOI: https://doi.org/10.29103/ijevs.v1i2.1525

Thiagarajan, Sivasailam. (1974). "Instructional Development for Training Teachers of Exceptional Children: A Sourcebook."

Zunaidah, Farida Nurlaila. (2014). "Pengembangan Bahan Ajar Matakuliah Bioteknologi Untuk Mahasiswa Semester Vii Jurusan Pendidikan Biologi Universitas Nusantara Pgri Kediri." *DISERTASI dan TESIS Program Pascasarjana UM* 0(0). http://repository.um.ac.id/60472/