

Flipped Classroom Learning Design Using the ASSURE Model

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Abstract: *Limited learning time in class is one of the factors inhibiting instructional objectives. In connection with this problem, the flipped classroom is considered one form of the right strategy to achieve learning objectives. This research describes the development of a learning system based on the flipped classroom. The study was conducted at SMAN 10 Malang. The research subjects were 30 students in grade X. This development's final product is the syntax of flipped classroom learning in PJOK subjects integrated with the ASSURE model. The development of this learning design has collaborated with the Unit Kegiatan Belajar Mandiri (UKBM)/ an independent learning design unit based on a learning management system (LMS). The validation results' percentage of the learning design obtained a score of 93.33; the media validation results were 94.28; and, the content validation results were 92.00. The field trials' results on the products also revealed satisfactory results with a percentage score of 80.61. Furthermore, the research subjects' learning evaluation results interpreted that all students (100%) could achieve the KKM (Kriteria Ketuntasan Minimum) / minimum completeness criteria value. Thus, it can be concluded that the development of flipped classroom-based learning design is very effective or feasible to be implemented in PJOK.*

Keywords: *Learning Design, Flipped Classroom, ASSURE Model*

Abstrak: *Terbatasnya waktu belajar di kelas menjadi salah satu faktor penghambat tujuan pembelajaran. Berkaitan dengan masalah tersebut, maka flipped classroom dianggap sebagai salah satu bentuk strategi yang tepat untuk mencapai tujuan pembelajaran. Penelitian ini menjelaskan tentang pengembangan desain sistem pembelajaran berbasis flipped classroom. Penelitian dilakukan di sman 10 malang. Subjek penelitian adalah siswa kelas x sejumlah 30 orang. Adapun hasil produk akhir dari pengembangan ini yaitu sintaks pembelajaran flipped classroom pada mata pelajaran pjok yang terintegrasi dalam model assure. Pengembangan desain pembelajaran ini dikolaborasikan dengan unit kegiatan belajar mandiri (ukbm) dengan basis learning management system (lms). Presentase hasil validasi terhadap desain pembelajaran mendapatkan skor 93,33; hasil validasi media 94,28; serta hasil validasi konten materi 92,00. Hasil uji coba lapangan terhadap produk juga memberikan hasil yang memuaskan dengan skor presentase 80,61. Selanjutnya, hasil evaluasi belajar terhadap subjek penelitian menginterpretasikan bahwa seluruh siswa (100%) dapat mencapai nilai kkm (kriteria ketuntasan minimum). Dengan demikian, dapat disimpulkan bahwa pengembangan desain pembelajaran berbasis flipped classroom ini sangat efektif atau layak untuk diimplementasikan ke dalam pembelajaran pjok.*

Kata Kunci: *Desain Pembelajaran, Flipped Classroom, Model ASSURE*

Submitted: June 2020

Reviewed: July 2020

Accepted: August 2020

Published: September 2020

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INTRODUCTION

One of the mandatory curricula that must be held in schools is learning related to students' physical and psychological development. The presence of Sports and Health Physical Education (PJOK) subjects complements the part of the national curriculum, which is applied through the subject approach. The PJOK subject's objectives are to cultivate students' abilities in the aspects of physical fitness, movement skills, critical thinking, social reasoning, emotional stability, moral action, and a healthy lifestyle (Ridwanullah, 2014).

The time allocation for learning PJOK can be said to be very limited. According to the Regulation of the Minister of Education and Culture No. 36 of 2018, PJOK subjects only receive three hours per week (Kementerian, Pendidikan, & Kebudayaan, 2014). This limited-time requires subject teachers to be able to maximize learning activities.

Initial observations made at SMAN 10 Malang related to the PJOK learning implementation found several real conditions, such as the following: (1) the teaching materials used by the teacher were only limited to textbooks, (2) the learning strategies used were centered on teacher delivery orientation (teacher-centered), (3) the time allocation for PJOK subjects was very limited, namely 90 minutes per week. Besides, the problem that often occurred was that not all sports could be maximally mastered by teachers at these schools. Such limitations could become inhibiting factors for learning that required problem-solving.

One of the steps to solve learning problems is by compiling an attractive learning system design concept. Setyosari & Sihkabuden (2005) explained that to create interesting learning, teachers can make several efforts such as (1) increasing commitment to efforts to improve the learning quality, (2) designing systematic and structured learning, (3) utilizing technology and learning media in carrying out the learning process.

In this study, the development of a flipped classroom-based learning system design in PJOK subjects at SMAN 10 Malang was combined with the use of the Independent Learning Activity Unit (UKBM). UKBM is a learning management system (LMS) based on digital learning media. LMS is a software that can be operated to manage the administration, implementation, and reporting of a learning process. Syaakir, Wibawa, & Endah (2013) elucidated that several LMS functions include (1) centralizing and automating administration; (2) able to provide services and guidance that can be done by users themselves without involving other people; (3) arranging and presenting learning content regularly; (4) using web-bases as the application platform; (5) supporting ease of portability and better standardization; (6) regulating reusable learning content. The LMS technology use integrated with learning is in accordance with Setyosari and Sihkabuden (2005) opinion, which explained that one of the efforts to improve learning quality is by utilizing technology and learning media.

The concept of flipped classroom-based learning system design requires active student involvement. The flipped classroom selection as a learning strategy in this study was based on limited time allocation. Furthermore, this study's flipped classroom also aimed to optimize the UKBM application at SMAN 10 Malang, especially in PJOK subjects. The researchers assume that theoretical material can be presented through virtual classes using UKBM media with the flipped classroom.

A flipped classroom is a form of learning strategy developed by Bergman & Sams since 2008. The learning concept refers to the mastery learning theory developed by Bloom & Carrol (1971). Bergman & Sams (2012) explicated that the flipped classroom is a learning strategy that can be implemented according to its name (flipped), which is to reverse the learning process. Some activities that must be done in class can be done outside, while tasks that must be completed outside school hours can be discussed in class. In the learning process, based on a flipped classroom, two parts must be done, namely

interactive activities in the classroom and individual learning outside the classroom with the help of computers or other technological devices (Bishop & Varleger, 2013).

Furthermore, flipped classroom-based learning has several advantages. Berret (in Yulietri, Mulyoto, & Agung, 2015) described that these advantages include: (1) students can study material at home before the teacher starts the learning process in class, (2) students can carry out learning activities according to their respective learning styles so that comfort in learning can be maximally achieved, (3) students who have difficulty understanding the material at home will get more intense attention from the teacher when meeting in class, (4) the material to be studied by students can be obtained from various forms of sources, such as videos, e-books, animation, and other content. Thus, it can be agreed that flipped classroom-based learning can accommodate various types of student learning styles.

Several studies have explained that flipped classrooms can increase learning effectiveness. Enfield (2013) found that the flipped classroom at California State University has provided new and interesting students experiences. Flipped classroom-based learning that has been implemented could help students learn several kinds of content and increase self-efficacy in their learning independently.

In connection with the flipped classroom learning model supported by UKBM as the medium, this research employed the ASSURE development model. It was because the development model could create effective and efficient learning activities related to time and costs, especially in learning activities using media and technology (Smaldino, E.S., 2011). Semerty, Meter, & Kristiantari (2013) also elucidated that the ASSURE model is a reference for teachers who will integrate learning by utilizing media and technology. Furthermore, Pransisca, Marhaeni, & Lasmawan (2018) stated that ASSURE's term stands for development model components. The six components are (1) analyzing learner characteristics; (2) stating performance objectives; (3) selecting methods, media, and materials; (4) utilizing materials; (5) requires learner participation; (6) evaluation and revision.

Some research results such as (1) Khazanah (2012) discovered that the learning system design development with the ASSURE model could increase learning outcomes by 83.33% in Surakarta. (2) Harjanti (2008) also revealed that the ASSURE model could increase the students' participation and creativity who have initially been low for the better. (3) Muammar, Harjono, and Gunawan (2017) stated that the learning design with the ASSURE model had a significant effect on the learning process. (4) Sundayana (2019), in his research, affirmed that the learning design with the ASSURE model could improve students' problem-solving skills and increase learning independence. (5) The ASSURE learning design model combined with environment-based learning could provide direct and meaningful experiences for students (Baharun, 2016).

The similarity of those studies with this research lies in the ASSURE model used in developing the learning system design. What makes the difference is the media selection applied to the research subject. In this study, the media used was UKBM SMAN 10 Malang. Therefore, in this study, the researcher would present information and data related to implementing the development of a flipped classroom-based learning system design. The learning system design has been applied to PJOK subjects at SMAN 10 Malang.

RESEARCH METHODS

This study employed the ASSURE learning development model.

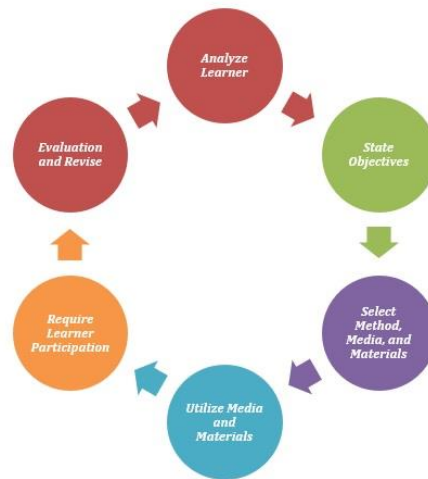


Figure 1. The ASSURE Model Learning Design Development Chart

The research subjects were students of class X SMAN 10 Malang. In the development process, validation was also carried out in three critical aspects. The validation was related to (a) the material content or content to be studied by students, (b) the media that would be accessed by students and teacher, and (c) the blueprint for the flipped classroom-based learning design.

The validation result data analysis would be adjusted to the instrument’s validity scale. The finding of the total average score of validity assessment aspects was adapted from Suwastono (2011) and Akbar (2013). The requirements of the instrument validity criteria are as follows:

Table 1. Validation Criteria

Achievement Value (Score)	Validation Category	Explanation
81,00 – 100	Very Valid	No Revision
61,00 – 80,00	Valid	No Revision
41,00 – 60,00	Quite Valid	Revision
21,00 – 40,00	Less Valid	Revision
00,00 – 20,00	Very Invalid	Revision

After the product development trial was implemented, the researchers continued the activity by providing written evaluations to students. It aimed to find out how effective the products that had been developed were. The average student evaluation results were then adjusted to the success level criteria table adapted from Arikunto (2020).

Table 2. Success Level Criteria

Number of Students Getting Scores Above Average	Predicate
75% - 100%	Successful
50% - 74%	Simply successful
< 49%	Failed

RESULTS AND DISCUSSION

The learning design based on the flipped classroom in this study followed the ASSURE development pattern. The ASSURE development pattern is as follows: (1) Student analysis, (2) Determining learning objectives, (3) Choosing methods, media, and materials, (4) Implementing predetermined methods, strategies, and materials, (5) Encouraging learning participation level, and (6) Evaluation.

Student Analysis. The observation results on student analysis obtained the following data. Students Initial Abilities; a) students were familiar with technology in terms of operating gadgets or computers, b) students have already known and used UKBM media at SMAN 10 Malang in other subjects, c) students were used to being connected to internet access, d) students knew prior knowledge of the material to be taught.

Student Learning Styles; a) students tended to like collaborative and group learning, b) students preferred to learn to use computers or other gadgets, c) students liked fun learning.

Student Characteristics; a) students consisted of heterogeneous groups, coming from different ethnicities, with an age range of 16-17 years, b) students were used to learning independently, c) students were familiar with internet use, d) some students preferred to study independently and some preferred groups, e) students were still learning under the teacher's direction as a facilitator, f) students' learning motivation in learning was not the same as a whole, different motives in following the learning process.

Determining learning objectives. After the data regarding student characteristics were obtained, the researchers and the learning teacher could determine the learning objectives to be achieved. In this development, the material presented to students was "Analysis of Basketball Game Movement Skills." Meanwhile, the learning objectives in this study were that (1) students could explain some of the terms contained in the coordination training of basic basketball techniques, such as passing, dribbling, and shooting, and (2) students could practice the direct coordination exercises for basic basketball techniques, such as passing, dribbling, and shooting.

Selecting methods, media, and materials. As explained in the previous section, the material chosen was "Analysis of Basketball Game Movement Skills. The selection had been adjusted to the material delivery time stated in the syllabus, where the syllabus in question had been compiled by the subject teacher.

For learning methods or strategies based on the flipped classroom, it could simply be described as follows. A few days before classroom learning activities, the teacher invited students to study virtual classroom material. In these virtual classroom activities, students could access learning modules and videos that had been uploaded to UKBM SMAN 10 Malang. Furthermore, when classroom learning was carried out, the teacher no longer explained the material from the beginning but invited students to analyze the material they had learned and then continued with the practice.

In optimizing UKBM at SMAN 10 Malang as a learning medium, the researchers and teacher developed content. The resulting content was in the form of a video, where the video was uploaded on UKBM media based on LMS. Before the media was presented to students, the researchers first validated it from the experts. The data results obtained from media experts showed a score above 75%. Thus, no revision was needed on the UKBM media at SMAN 10 Malang and the content therein. Based on the validation criteria table, the media validation percentage was in the range of 80% - 100%. It showed that the media used had a "valid" criterion and were feasible for PJOK learning. The following is a validation result table from learning design experts.

Apart from the media, the material in the content that would be presented to students was also validated first. The material validation results showed that the score was above 75%, so there was no need to revise the content used as material for students. Based on the validation criteria table, the material validation percentage was in the range of 80% - 100%. It showed that the material content presented to students had a "Very Valid" criterion and was appropriate to be presented.

Implementing methods, strategies, and materials that had been determined. At this stage, several steps for implementing learning activities would be carried out to the students. In detail, it can be explained as follows. 1) Previewing the Materials. According to the syllabus and lesson plans, developers

and teacher prepared teaching materials according to the material to be delivered to students. 2) Preparing the Materials. The developers uploaded learning materials, instructional videos, and e-books into the UKBM of SMAN 10 Malang, with the aim that students could learn them outside the classroom independently. 3) Preparing the Environment. Developers and teacher explained the technical learning that would be carried out to students. It was where students would be given an understanding of how to learn using the flipped classroom method using online media of UKBM SMAN 10 Malang. 4) Preparing the Learner, developers and teacher carried out learning contracts with students according to the existing lesson plans, developers and teacher explained learning objectives to students, developers, teacher, and students made agreements about discipline during learning, and developers and teacher ensured student readiness to carry out online learning. 5) Providing Learning Experience. Developers and teacher divided students into heterogeneous groups, developers provided subject code that would be accessed by students, students began to log in with their respective accounts into UKBM at SMAN 10 Malang to carry out flipped classroom-based learning, the developers began to upload the PJOK lesson plan, which contained learning procedures and group assignments, the developers uploaded learning material files as a basis for doing assignments for students, students knew the schedule for collecting assignments given by the teacher and could do quizzes through UKBM SMAN 10 Malang, students were required to follow the tutor's instructions while accessing UKBM at SMAN 10 Malang, students could exchange ideas regarding learning with other students, the developers gave a quiz in the form of questions done in UKBM SMAN 10 Malang.

Encouraging student participation levels. In this section, students were directed to log into the UKBM of SMAN 10 Malang. Through UKBM SMAN 10 Malang, students could learn subject matter outside the classroom. Students could determine where to study according to their respective learning comfort criteria. Furthermore, students could carry out discussions and upload the assignments' results given by the teacher also through UKBM.

Evaluation. At the evaluation stage, the researchers carried out two different activities. First, the researchers evaluated the learning design by conducting field trials. Both evaluations were done by assessing student learning outcomes after implementing flipped classroom-based learning activities.

The results of the field trial responses obtained an average percentage of 80.61% so that it could be interpreted that the design of a flipped classroom-based learning system using UKBM media was feasible to be applied in PJOK learning at SMAN 10 Malang. Whereas, at the learning outcome evaluation stage, the activity was carried out twice, namely written and practical tests. Student learning outcomes test data of 30 people are presented in the following table.

Table 3. Score Data of Study Result Test

No.	Student's Name	Score		Average	KKM	Explanation
		Written Test	Practice			
1	AFRH	80	80	80	70	Completed
2	BCH	80	80	80	70	Completed
3	BHS	80	82	81	70	Completed
4	BNS	100	88	94	70	Completed
5	CPM	70	78	74	70	Completed
6	CRTP	70	76	73	70	Completed
7	DHR	68	78	73	70	Completed
8	ESS	66	78	72	70	Completed
9	EI	82	78	80	70	Completed
10	FA	84	80	82	70	Completed
11	FKC	84	82	83	70	Completed
12	GFA	80	84	82	70	Completed
13	GPA	80	84	82	70	Completed

No.	Student's Name	Score		Average	KKM	Explanation
		Written Test	Practice			
14	IS	80	82	81	70	Completed
15	IAN	84	80	82	70	Completed
16	JRA	70	76	73	70	Completed
17	KDN	70	76	73	70	Completed
18	K	70	78	74	70	Completed
19	MHHV	84	78	81	70	Completed
20	MRDP	68	76	72	70	Completed
21	MRPP	80	78	79	70	Completed
22	MRA	80	80	80	70	Completed
23	MRW	84	82	83	70	Completed
24	MRS	80	82	81	70	Completed
25	NPR	76	84	80	70	Completed
26	NAM	80	84	82	70	Completed
27	NS	100	90	95	70	Completed
28	RV	76	76	76	70	Completed
29	RP	84	74	79	70	Completed
30	SL	68	76	72	70	Completed

Based on the data from the table above, it could be interpreted that all students (30 people) had succeeded in achieving the KKM (Minimum Completion Criteria). Thus, it could be concluded that the flipped classroom learning design in PJOK subjects at SMAN 10 Malang was "successfully" applied.

Furthermore, this learning development plan was also validated by learning design experts. The score obtained from this learning design development was 93.33%. Based on the validation criteria table in table 1, the score belonged to the "Very Valid" category, so it was very feasible to be implemented. The validator stated that flipped classroom-based learning in PJOK subjects was considered innovative and could provide new learning experiences for students.

Flipped classroom-based learning carried out in PJOK subjects at SMAN 10 Malang was included in the blended learning category. In the learning process, the teacher could combine several ways of delivering material to achieve predetermined goals, such as giving students time to learn independently according to their respective learning styles. It is in line with the opinion described by Bonk & Kim (2004) that several characteristics of blended learning include (1) learning that combines various methods of delivery, teaching models, learning styles, and various technology-based media, (2) as a combination of direct teaching (face to face), it consists of independent learning and independent learning via online, (3) learning supported by an effective combination of ways of delivering teaching methods and learning styles, and (4) teachers and parents have an equally important role, teachers as facilitators, and parents as supporters.

Another opinion was also expressed by Dwiyogo (2014) that blended learning is defined as a combination of face-to-face, offline, and online learning. Graham (2006) also explained the similar thing that blended learning can be combined with face-to-face learning with computer-based learning, which means learning that combines learning resources contained in computer media, smartphones, or television channels, videos, and other electronic media. Darmawan (2014) also clarified that this blended learning model combines various learning models aimed at optimizing distance learning processes and services, traditional, media, and even computer-based.

The flipped classroom strategy developed in this study was a rotation model on the blended learning itself. The syntax for the development of flipped classroom learning products in this study is in line with the opinion of Dick, Carey, & Carey (2004), which elucidated that learning is a series of events or activities conveyed in a structured and planned manner using one or several types of media. The

product developed with the ASSURE model has been described in detail about the systematics of learning from the beginning to the final process.

The development of this learning design product refers to opinion Gagnon & Collay (2001), which explained that the design is the overall structure, framework, and sequence, or systematics of activities. Smith & Ragan (2005) also have a similar description, which defines design as a systematic planning process carried out before developing or implementing an activity. The two expert opinions, which became the reference, are reinforced by Reigeluth (1999) opinion, which defines the notion of learning design as a plan for applying learning and learning theory to facilitate the learning process.

Based on observations during the study, the flipped classroom strategy using UKBM media could be said to accommodate various kinds of student learning styles. It is in line with the opinion of Yulietri et al. (2015), who have explained some of the flipped classroom advantages. Thus, this research adds to the strengthening that the flipped classroom-based learning design development with the ASSURE model can provide new learning experiences and increase the student learning independence level.

CONCLUSIONS AND RECOMMENDATIONS

Based on the research and development results, it could be concluded that the flipped classroom-based learning design was very feasible or very effective to be applied to PJOK subjects. It could be seen from the student learning outcomes, which stated that all research subjects had succeeded in achieving the KKM when conducting an evaluation. Besides, students also stated that they had gained new experiences related to PJOK learning collaborated with technology. In this case, it was a web-based facilitated learning management system at SMAN 10 Malang UKBM media and the content therein.

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<p>How to cite: Sugiri, W. A., Priatmoko, S., Basori. (2020). Flipped classroom learning design using the ASSURE model. <i>Teknodika</i>, 18 (2), 124-132. DOI: https://doi.org/10.20961/teknodika.v18i2.42279</p>
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