



Systematic Literature Review: Improving Self Regulated Learning Through The Flipped Classroom Model Based on Interactive E-Books

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Abstrak

Dalam flipped classroom, siswa dituntut memiliki perilaku kemandirian belajar demi tercapainya kompetensi yang optimal. Akan tetapi kenyataannya kemandirian siswa dalam belajar kurang baik, maka sebagai guru sudah seharusnya melaksanakan pembelajaran yang dapat memfasilitasi terbentuknya kemandirian belajar siswa. Salah satu pembelajaran yang mampu meningkatkan kemandirian belajar siswa adalah model Flipped Classroom dengan berbantuan e book interaktif. Penelitian ini bertujuan untuk melakukan kajian literatur terkait dengan pentingnya meningkatkan kemandirian belajar siswa melalui model Flipped Classroom berbasis e-book Interaktif. Metode SLR (Systematic Literature Review) dipilih dalam penelitian ini. Pengumpulan data dilakukan dengan mendokumentasi serta mereview semua artikel mengenai kemandirian belajar yang memiliki penelitian serupa pada laporan penelitian ini. Sebanyak 15 artikel jurnal yang diperoleh dari Google Scholar dengan bantuan aplikasi publish and perish digunakan pada penelitian ini. Berdasarkan kajian literatur yang dilakukan dapat disimpulkan bahwa meningkatkan kemampuan kemandirian belajar sangat dibutuhkan siswa dalam pembelajaran terutama dalam pembelajaran daring dengan model flipped classroom berbasis e-book Interaktif. Kemandirian belajar memiliki pengaruh yang positif bagi siswa dalam pembelajaran.

Kata Kunci: kemandirian belajar, flipped classroom, e-book interaktif.

Abstract

In the flipped classroom, students must have independent learning behavior to achieve optimal competence. However, the reality is that students' independence in learning is not good, so a teacher is supposed to carry out knowledge that can facilitate the formation of student learning independence. One of the lessons that can increase students' learning independence is the Flipped Classroom model with the help of interactive e-books. This study aims to conduct a literature review on the importance of improving student learning independence through the Flipped Classroom model based on Interactive e-books. The SLR (Systematic Literature Review) method was chosen in this study. Data collection was carried out by documenting and reviewing all articles on learning independence that had similar research in this report. A total of 15 journal articles obtained from Google Scholar with the help of the publish and perish application were used in this study. Based on the literature review, it can be concluded that increasing the ability to learn independently is needed by students in learning, especially in online education with the interactive e-book-based flipped classroom model. Independent learning has a positive influence on students in education.

Keywords: independent learning, flipped classroom, interactive e-book.

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INTRODUCTION

The Covid-19 pandemic has brought about various changes in various aspects of life, including education (Dewi, 2020; Fadlilah, 2020; Usman et al., 2019). To reduce the spread of the virus, almost all public facilities were closed, including schools. The physical distancing policy is carried out to avoid the spread of the Covid-19 virus, so online and offline distance learning must be carried out at all levels of primary education to high levels (Lesmanawati et al., 2020; Setiawan et al., 2021; Utomo et al., 2021). Students' affective abilities in learning mathematics are needed for optimal learning during this pandemic period, namely the ability to learn independently. This means that online education is inseparable from independent learning related to mathematical knowledge. This is in line with Ruswana and Zamnah (2018) research that there is a significant relationship between learning independence and the ability to understand concepts.

Learning activities online or online require students to have independence in learning. Students need independent learning (Self Regulated Learning) is needed by students in building the concepts and principles they learn. Learning independence is a self-awareness to know by not depending on others and feeling responsible for achieving the desired goals (Abeysekera & Dawson, 2015). In the Flipped classroom, which is an example of a blended learning strategy, which has broad autonomy in learning, students are given more autonomy over their learning process. This places importance on students' learning independence skills (H. J. Shih & Huang, 2020).

The aspect of learning independence has not been considered as an important factor that affects student learning outcomes, it is indicated that during the learning process there is less emphasis on aspects of learning independence, even though there is a tendency where the higher the level of education, the higher the learning independence required (Ranti et al., 2017). Based on the results of observations on the subjects that students must learn by paying attention to the facilitation of learning independence, there are still many students who have difficulty in doing proof without guidance from the teacher. Students collide on understanding the concept and the steps that must be taken in proving the concept (Fanny et al., 2021; Suryanto et al., 2017; Zulela et al., 2022).

To increase learning independence for students, it is necessary to have a learning pattern that pays attention to the facilitation of independent learning. One of the learning models that can be applied is the Flipped classroom model based on interactive e-books. In flipped classroom learning, the learning activities that occur are "a mixed form of learning in which students learn content online by opening interactive e-books, usually at home, and homework is done in class with the teacher and students discussing and solving questions. Teacher-student interactions are more personalized with online guidance, not lectures."

In today's era, the use of technology is a fundamental thing that needs to be considered by teachers, because technology is a tool that can be used to create meaningful experiences in the teaching and learning process. This can be done by applying the concept of a flipped classroom assisted by interactive e-books. According to Bergmann, J., and Sams, (2012) the flipped classroom method is an innovative pedagogical approach that focuses on learner-centered teaching by reversing the traditional classroom learning system that has been carried out by teachers. McLaughlin et al (2014) stated that the flipped classroom method does have many benefits, such as students will have positive opinions and be open to new knowledge, be more active, more independent and creative and more critical in addressing certain case problems (Aisyah et al., 2020; Sari et al., 2022; Setiawan et al., 2022).

Integrating face-to-face activities and online learning by utilizing interactive e-books. It is hoped that students will be more independent in learning activities so that learning becomes more interesting, fun and provides opportunities for students to develop their competencies and access various kinds of information

needed to understand teaching materials (Antariksa, 2021; Anwar & Wicaksono, 2020; Izzaty & Nurfitriani, 2021).

Seeing the importance of aspects to increasing learning independence in a lesson, therefore it makes researchers interested in conducting a literature review on the importance of increasing learning independence through flipped learning based on interactive e-books. So that it can be used as a guide for researchers regarding the importance of increasing learning independence through flipped learning based on interactive e-books in developing and researching further.

METHOD

The SLR (Systematic Literature Review) method was selected and used in this study. This method is carried out by identifying, reviewing, evaluating and interpreting all available research. With this method, researchers review and identify journals systematically which in each process follow the steps that have been set (Triandini et al., 2019).

Based on the stages above, to complete the results of the study, the researchers collected journal articles with the keywords independent learning, online learning, or a combination of both. Data collection was carried out by documenting all the articles obtained in this literature review article. The articles used in this study were 15 articles of accredited national journals closely related to the keywords used which were obtained from Google Scholar with the help of the Publish and Perish application. The article data is presented in a table which includes the author's name, year of publication, journal name, and research results. The selected articles are articles that have similar research and then the articles are analyzed and summarized. The results of the research are then incorporated into a complete discussion in this article.

RESULTS AND DISCUSSION

Results

The results of the research data included in this literature review are an analysis and summary of documented articles related to increasing student learning independence through an interactive e-book-based flipped learning model, which is presented in table 1.

Table 1
The research results on improving learning independence through flipped classroom based on interactive e-books

Researcher and Year	Journal	Research Results
(Moos & Bonde, 2016)	Technology, Knowledge and Learning - Springer	Conducted research to test the effectiveness of embedding self-learning commands in videos designed for the Flipped Classroom model. The results showed that comprehension monitoring was significantly associated with pausing and restarting videos during a learning task. In addition, students who received the instructions embedded in the video were more actively involved in the process of independent learning.
(Lai & Hwang, 2016)	Computers & Education - Elsevier	To evaluate the effectiveness of the A self-regulated flipped classroom approach. The experimental results showed that the post-test score of the experimental group was significantly higher than that of the control group. It was also found that students with higher self-regulated learning showed significantly different learning outcomes when learning with different approaches, while there was no significant difference between low self-regulated students with different learning approaches.

Researcher and Year	Journal	Research Results
(Yamada et al., 2017)	Research and Practice in Technology Enhanced Learning	The results showed that the number of slides read from 240 to 299 seconds indirectly had a positive effect on increasing learning independence.
(Kharismawan et al., 2018)	Journal of Innovative Science Education	It was concluded that the application of PBL-based modules had an effect on increasing students' critical thinking skills and independent learning.
(Chen & Su, 2019)	Educational Technology & Society	Using BookRoll's digital teaching materials delivery and e-book reading system, to record and track student preview status via the BookRoll dashboard in learning at universities in Taiwan supported student self-learning and demonstrated significant improvements in self-learning and self-efficacy.
(M. Shih et al., 2019)	Interactive Learning Environments - Taylor & Francis	The results showed that student interaction in the classroom and online learning independence had the quality of online learning activities and positive experiences in the flipped classroom.
(Wang, 2019)	Computers & Education - Elsevier	It is said that the flipped classroom can create a learning environment that facilitates increasing student self-learning (SRL) and increasing student engagement and achievement.
(Kustandi et al., 2019)	International Conference on Education Technology (ICoET 2019)	The results obtained are the impact of the application of blended learning on independent learning
(Suryani, 2020)	Jurnal Penelitian, Pendidikan, dan Pembelajaran	of the percentage of 77.6% categorized as very positive. So it can be concluded that the tendency of students' learning independence, namely students are proven to have positive learning momentum.
(Rahmasari et al., 2020)	Inventa: Jurnal Pendidikan Guru Sekolah Dasar	This research is a mix method experiment. The results showed that mathematical reasoning and Self
(Yuliati & Saputra, 2020)	Elementaria Edukasia	The experimental class regulated learning using schoology and Google Classroom is better and more effective
(Kusumadewi et al., 2020)	JRPD: Jurnal Riset Pendidikan Dasar	Online learning that is currently being implemented can increase students' learning independence by
(Sobri et al., 2020)	Jurnal Pendidikan Glasser	improve students' memory, provide broad insight into their experiences through text, video and audio.
Susantini, et al., 2021	Research and Practice in Technology Enhanced Learning	Blended learning is effective in increasing student learning independence and becomes an alternative learning that can be applied during the covid-19 pandemic
Maslihah, et al., 2021	Journal of Physics: Conference Series	There is an instillation of independent character in students' souls during online learning in elementary schools.

Discussion

Learning independence is a skill to carry out teaching activities independently based on one's own desire to master a learning material to be used in solving problems encountered (Amalia et al., 2018). With independent learning, students can grow separate characters in education, encourage student motivation to learn on their initiative, and teach students to be responsible and confident in overcoming their problems.

Independent learning has been studied has characteristics namely Supianti in (2020) suggests that the features of independent learning are as follows: (1) Individuals design their learning according to the needs concerned; (2) Individuals choose to learn tips and implement their learning designs; and (3) individuals monitor their learning progress, evaluate their learning outcomes, and compare them with specific standards.

Based on the research results in the table, the research that has been carried out has received a positive response from students. However, it is underlined when this learning independence is applied in online learning through an interactive e-book-based flipped classroom, including 1) students are not familiar with distance learning, 2) need time to adjust to the shift from conventional learning systems to online, 3) still exist. Some students have not independently studied, especially in mathematics. To overcome this Kusuma Dewi et al., (2020) get to grow independent characters in students. This also happens in research by Fahrurrozi & Majid (2017), where learning is still teacher-centered, a boring learning model. To overcome this, use a blended learning model and train students' independence to be actively involved in learning.

In addition, it can be seen from the study results that learning independence has a positive influence on learning. Independent learning can also improve students' understanding, motivation, reasoning, and learning outcomes. They realize the importance of different learning abilities in education. This independent learning ability should be something that should be considered and improved. Especially in online learning, this independent learning significantly impacts student learning outcomes. If students have low learning independence, students do not get optimal learning outcomes.

Research related to independent learning in online learning is still not much researched as independent learning with offline learning. So in this article, the researcher does a literature review that can be used as a literacy study and guide in further researching and developing an independent understanding of online learning.

CONCLUSION

Based on a theoretical study regarding efforts to increase learning independence through a flipped classroom model based on interactive e-books. It is known that improving students' learning independence positively influences online learning by using an interactive e-book-based flipped classroom model where they study learning materials before class and apply learning content during the course. The conclusion is that increasing learning independence through the flipped classroom model based on interactive e-books is beneficial for students and can be alternative learning that can be used in education.

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