check for updates

THE UNIQUENESS OF FLIPPED LEARNING APPROACH

🄳 **Siti Fatimah Abd Rahman¹**
🄳 **Melor Md Yunus²⁺**
🄳 **Harwati Hashim³**

¹,²,³Faculty of Education, Universiti Kebangsaan Malaysia, UKM Bangi, Selangor, Malaysia.
¹Email: sitifatimahrhmn@gmail.com Tel: +60126263539
²Email: melor@ukm.edu.my Tel: +60192644401
³Email: harwati@ukm.edu.my Tel: +60196993717

(+ Corresponding author)

ABSTRACT

Pedagogical changes and adaptation of new models in teaching and learning should be considered as a means to develop a nation. One of the most popular growing models is flipped learning. Flipped learning is widely used all over the world in the teaching of different fields and subjects. It promotes meaningful learning, more student-centered rather than teacher-centered and is commonly aided with technological equipment such as pre-recorded videos, mobile apps or simply watching videos on YouTube before coming to the class. This paper reviews the level of participants, methodological approaches and the discipline of flipped learning research based on nineteen selected articles published in 2015 until 2019. The inductive content analysis examined the participants' level, the methodological approaches used in conducting their research as well as the field of the research. Data was analyzed using descriptive analysis. The findings suggested that flipped learning is a great approach to be applied in the classroom regardless of the field of the study. It also could be an effective teaching method in the 21st century of education.

Contribution/Originality: This paper's main objective was to find out the common areas that researchers look at when conducting a study which is the target population, methodologies and research areas. The findings can be used by educators and stakeholders in implementing flipped learning in their institutions.

1. INTRODUCTION

The 21st century needs a paradigm shift in teaching and learning styles. It demands for student-centered learning compared to the traditional classroom where teacher is postulated to be the centered of learning. Since innovation develops over time (Yunus, 2018) education has no exemption. Technology-integrated education is one of the chosen ways as it offers unlimited resources to education (Sun & Gao, 2019). It is also a medium of delivering and receiving information between teacher and students (Zaki & Yunus, 2015). The young students prefer to do everything online, including learning and socializing. One of the studies on online learning shows that students are learning the elements of English language through the social media (Shazali, Shamsudin, & Yunus, 2019). Hence, teachers should consider using flipped learning in teaching and learning as it has tremendous benefits.

Flipped learning is one of the growing technology-integrated teaching approaches that is categorized under blended learning (Rahman, Yunus, & Hashim, 2019). Blended learning is half online and half in class learning, and flipped learning is slightly different. The foundation of flipped learning is in class activities that emphasize cooperative learning and problem solving as well as the knowledge retention. It was introduced by Bergmann and Sams (2012) because their students could not come to class due to training and tournaments. They recorded their

lectures and put it online so the absent students could be able to watch it later (Hamdan, Mcknight, Mcknight, & Arfstrom, 2013). Since then, it has become a popular approach. This article explores the basic foundation and the characteristics of flipped learning, the overview of flipped learning from the previous research, teachers' and students' roles in implementing flipped learning, the advantages and disadvantages of using flipped learning and lastly the conclusion, implication and some recommendations for future research.

2. AN OVERVIEW OF FLIPPED LEARNING

Jonathan Bergmann and Aaron Sams introduced flipped learning in the year of 2007 when their students missed too many classes for basketball games, training, and tournaments. Teachers had to repeat the important lessons for them as they missed crucial content. They figured out a better solution by recording the lectures using screen-casting software during Spring 2007. They recorded instructions and used class time for meaningful activities such as questioning and answering session. Flipped learning has gained popularity ever since (Sams & Bergmann, 2013).

The main purpose of using flipped learning is to maximize the face-to-face time between teachers and students in the classroom. In the traditional classroom, many teachers used the classroom for the lecture and not working with the students. However, Sams and Bergmann (2013) suggested that teachers should spend face-to-face time with students by applying the higher level of Bloom's Taxonomy and the lower level of Bloom's Taxonomy should be outside of the classroom. It seems a lot of responsibility for teachers.

However, flipped learning is not a one size fits all model. It can be used in many different situations. A lesson can also be flipped or not to be flipped depending on the necessity and the objectives of the lesson itself. Figure 1 shows the Bloom Taxonomy of the Flipped Model vs the Traditional Model.
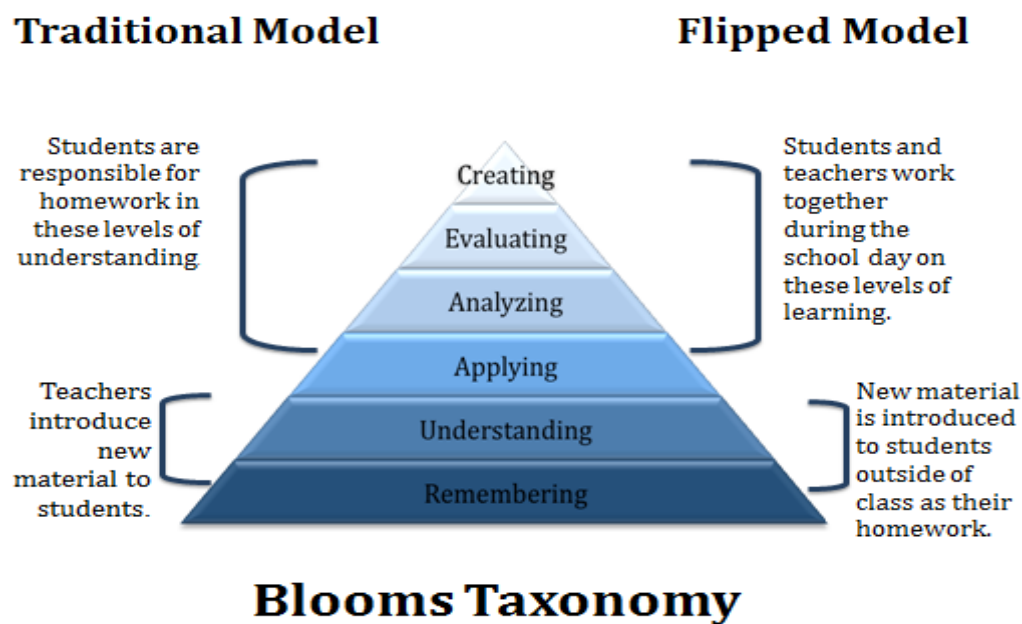

Figure-1. Bloom's taxonomy: the traditional model vs the flipped model.

There are two important keys in flipped learning approach according to Howitt and Pegrum (2015). The first key is students' flexibility to move at their own pace as they work out of the class. They can also watch different videos that appropriate with their levels and interest. This could help with differentiation, personalization of learning as well as promote student autonomy. The second one is, when students are well prepared before class, students are aware and ready for in class lessons. Class times are meant for discussion, collaborative inquiry, interaction and hands-on activities. Hence, the higher order skills can be engaged with in class with the help of

peers and teachers. As supported by Vygotsky (1978) meaningful learning takes place when students communicate actively with teachers and peers, and engage actively in the learning process. The teacher could pay extra attention to those who are struggling and need extra help in learning.

It can be summarized as that it is not only videos or materials that are important, but it is how they support the overall learning approach (Tucker, 2012). The best way to describe flipped learning characteristics is by the F-L-I-P model (Hamdan et al., 2013). Figure 2 shows the four pillars of flipped learning model.

Figure-2. Pillars of flipped learning.

The first pillar, Flexible Environment or F represents the variety of learning modes that can be implemented inside and outside the classroom. This allows students to learn in their own way and at their own pace. The second pillar, Learning Culture or L represents the student-centered approach, where in class time is meant for exploring in depth of certain topics and creating rich learning opportunities. Thus, students are involved in active knowledge construction and gaining meaningful learning. This is contrast to the traditional teacher-centered model where the teacher is the primary source of information.

The third pillar is I, or Intentional Content. Flipped learning instructors or teachers always think of how this model could help students to develop conceptual understanding and procedural fluency. Instructors or teachers determine what they want to teach and which materials should they use so that students can explore on their own. Instructors or teachers should adopt a student-centered approach, and active learning strategies, depending on the subject matter and grade level.

The last pillar is the Professional Teacher or P. It represents the role of a professional teacher. Teachers must observe their students, give feedback, and assess their work. They must also be reflective in their practice, always improvise their instructions, accept criticism, and able to control chaos in their classrooms. Even though teachers play less visible roles in flipped classrooms, they remain the most important ingredient that enables flipped learning to happen. Chen, Wang, and Chen (2014) supported that in flipped learning, teachers play an even more crucial role than compared to the traditional classroom.

3. TEACHER'S AND STUDENT'S ROLES

Teachers might face some challenges in developing out of class and in class elements. In implementing flipped learning, teachers need to design the overall structure of learning, from the preparation up to the discussion or assessment. It should be done carefully to ensure that students will achieve the objective of the lesson.

Flipped learning is reasonably new. Challenges are normal when it comes to implementing it in schools or higher institutions. Many teachers teach more than one class at different levels. They need extra time and efforts in redesigning the existing course accordingly to students' level. In preparing good quality videos or other materials, there are several issues that need to be considered. For example, in preparing a video, Bergmann and Sams (2012)

suggested that only one topic should be covered in one video and it should be less than 15 minutes long. Ideally, between 5 to 10 minutes if possible. In certain cases, 3 to 5 minutes is good enough Bridgeman (2013). The idea is to make it short, and easy for the students to re-watch (Rosenberg, 2013).

In preparing multimedia instructions, the best basic elements are suggested by Mayer (2009). Instructions should be clear, no unnecessary materials, no redundant captions, adding pictures with voice rather than written text and adopt personalized style. Preparing the pre-recording videos or any flipped learning materials are somehow not time consuming (Bergmann & Sams, 2012; Enfield, 2013; McGivney-Burelle & Xue, 2013). The most important thing that teachers need to consider is what should happen in both class time and out of class time (Enfield, 2013). Teachers should be the facilitators, guiding the students in learning possibilities, in line with progressive approaches like social constructivism. Hence, meaningful learning could be obtained. In addition, in implementing technology in a classroom, the role of teacher is the most crucial part in order to help with students' acceptance (Woon & Yunus, 2019).

In making sure the flipped learning is successful, students should play an important role too. The first thing students need to consider is good connectivity, hardware and software to watch videos prepared by the teachers (Bergmann & Sams, 2012; Milman, 2012; Rosenberg, 2013). Davies, Dean, and Ball (2013) says it is important for students to have some training on the rationale of flipped learning as students are more responsible for their own learning. They might need some guidelines on how to watch the videos or other materials effectively. Bergmann and Sams (2012) advise a few tips for teachers; (1) ask the students to turn off other media channels, (2) take notes, and (3) ask interesting questions. Those tips to ensure students get the gist in the videos they are watching.

4. ADVANTAGES OF FLIPPED LEARNING

There are benefits and downsides in every initiative. Flipped learning is no different. However, if flipped learning is used correctly, the benefits are enormous. In the 21st century students are well equipped with gadgets. It is a rare situation to see a student without a gadget nowadays (Defour, 2013). They grow up with the Internet and social media. Bergmann and Sams (2012) say that students are excited by flipped learning only for the first few weeks, after which they react like nothing is new. Hence, they concluded that students could easily accept the new instructional shift in the classroom. Another benefit of flipped learning is the face-to-face time spent with teachers and peers. Flipped learning offers more time for feedback between teachers and students and better interactions between teachers and students (Goodwin & Miller, 2013). Bergmann (2011) add that by using flipped learning, he could talk to every student, every day like he has never done before in his previous twenty years of teaching.

Another obvious advantage is, students can pause or replay the video anytime they want, according to their pace. If they are absent, they still receive the same instructions as their peers did. Compared to the in-class lecture, students cannot stop the teachers or ask them to repeat the necessary information. If the student is shy, he or she will just keep quiet for the rest of the class (Springen, 2013). It is a bonus for teachers too since teachers do not have to repeat themselves in class. Lastly, science has proven that students have merely 10 minutes of the introduction of a new topic before they lose interest (Goodwin & Miller, 2013). Therefore, pre-recording video should be limited to only 5 to 10 minutes. By contrast, in the traditional class, a normal period could be up to 45 minutes.

5. DISADVANTAGES OF FLIPPED LEARNING

Shifting to a new model is not that easy. Resistance towards this model has come from students, teachers and parents, claiming numerous concerns. They claim students have a tough time adjusting and adapting to this model. Students feel burdened, as they must do a lot of work while at home. They are supposed to spend their free time surfing through the Internet or on social media, and not worrying about watching the pre-recorded instructions (Defour, 2013). Parents and teachers hesitate because they learnt through lectures, so why can't their children? They claim that lectures are not bad at all (Goodwin & Miller, 2013). Springen (2013) also mentioned that there are

certain students who refuse to do homework, whether it is worksheet or a video lesson. Another major drawback is the Internet connection. There are rural schools without the Internet connection. However, teachers have backup plans by giving out DVDs and flash drives. Apparently, parents also become stressed when they have to share their PCs or laptops with their kids at home (Fulton, 2012). There is also a growing concern that kids from lower socio-economic backgrounds that will not be able to afford high enough levels of access to the internet or the technology necessary to participate. We are already seeing this in the response to Covid-19 with schools struggling to teach all the kids in a class online without ostracising those who are less well off. Finally, teachers worry about the management of the new model. They feel that recording a video is harder than what they can do in front of the class. They also then have more workload planning and recording videos at home (Defour, 2013). Teachers, who like quiet classrooms, might have a hard time while conducting collaborative assessments. While collaboration is a crucial component in flipped learning, students may struggle individually on standardized tests (Springen, 2013).

Table-1. Research on flipped learning from 2015 to 2019.

No	Author/year	Title
1	Raman, Rathakrishnan, and Thannimalai (2019)	Flipping the Undergraduate Classroom: A Case Study
2	Rahman et al. (2019)	A Technology Acceptance Model (TAM): Malaysian ESL Lecturers' Attitude in Adapting Flipped Learning
3	Ali, Yunus, Hashim, Hidayat, and Zaman (2019)	Experts' Agreement towards Student Engagement Constructs for a Strategic Development of a Flipped Learning Framework for ESL Context
4	Ali, Yunus, Hashim, Rahim, and Khamis (2019)	Strategic Development of Flipped Framework on Educators and Learning Constructs for ESL Context: The Experts' Agreement
5	Chun and Sathappan (2018)	The effectiveness of using Fl pped Classroom Approach to teach adjectives to Malaysian Year 4
6	Ishak and Abu (2018)	Exploring TPACK domains of Malaysian non-option ESL educators in an online flipped learning course through Blendspace
7	Singh, Singh, Mohtar, and Mostafa (2017)	A Review of Research on Flipped Classroom Approach for Teaching Communication Skills in English
8	Jones (2016)	A Case Study of Blended Learning in Higher Education in Malaysia: Flipped, Flopped or Forgotten?
9	Sambandamurthi (2015)	Experiences and Challenges of using Flipped Classroom by Postgraduate Students: A Preliminary Comparative Study between India and Malaysia
10	Techanamurthy, Alias, and Dewitt (2015)	Readiness for Flipped Learning among Culinary Arts Students
11	Pudin (2017)	Exploring a Flipped Learning Approach in Teaching Grammar for ESL Students
12	Danker (2015)	Using Flipped Classroom Approach to Explore Deep Learning in Large Classrooms
13	Tazijan, Murugan, Rahim, Mohamed, and Mathai (2016)	A Survey of Flipped Learning Approach in the ESL Context
14	Rahman et al. (2015)	Significance of Preparedness in Flipped Classroom
15	Vijaya and Shoup (2018)	Effectiveness of Flipped Learning on Disruptive Behaviours Among Malaysian Elementary School Students
16	Chew, Jones, and Wordley (2018)	"Flipping or flapping?" investigating engineer students' experience in flipped classroom
17	Halili, Razak, and Zainuddin (2014)	Flipped classroom approach for preschool students in learning English language
18	Juhary and Amir (2017)	Flipped Classroom at the Defence University
19	Abdullah and Azizan (2018)	A Flipped Classroom Technique in Improving Students' Grade of Transport Phenomena Course

6. METHODOLOGY

In analysing the data, an inductive content analysis was used to analyse nineteen selected articles on flipped learning that have been published from 2015 until 2019. In this analysis, themes can be established as the sprouting model. Descriptive analysis was used to investigate the percentage of elements that have been analysed namely content, methodological approaches and discipline. The rationale of having this analysis is that by having the themes, readers can choose the articles according to their interest, and it can be used as reference for future research.

6.1. Research Questions

1. What is the level of participants of the selected articles of flipped learning in 2015 to 2019?
2. What are the methodological approaches used by researchers in the selected articles of flipped learning in 2015 to 2019?
3. What are the disciplines covered in the selected articles of flipped learning in 2015 to 2019?

Table 1 shows the studies done by nineteen researchers of flipped learning from 2015 until 2019.

7. FINDINGS

This section discusses the findings of the study based on the three research questions mentioned in the methodology section.

7.1. Level of Participants

Table-2. Level of Participants of the selected articles.

No	Level of participants	No. of articles	References
1.	Undergraduate Students	12	Raman et al. (2019); Ali et al. (2019); (Ali et al., 2019); Sambandamurthi (2015); Techanamurthy et al. (2015); Pudin (2017); Danker (2015); Tazijan et al. (2016); Chew et al. (2018); Juhary and Amir (2017); Abdullah and Azizan (2018).
2.	Elementary School Students	2	Chun and Sathappan (2018); Vijaya and Shoup (2018)
3.	Lecturers	2	Rahman et al. (2019); Jones (2016)
4.	Undergraduate Trainees	1	Singh et al. (2017)
5.	School Teachers	1	Ishak and Abu (2018)
6.	Preschool students	1	Halili et al. (2014)

The first finding aims to answer the first research question: one; "What is the level of participants of the selected articles of flipped learning in 2015 to 2019?". Based on the analysis, articles were categorised and ranked based on their frequency. Table 2 shows that out of nineteen articles, twelve were done with undergraduate students (Raman et al., 2019); (Ali et al., 2019); (Ali et al., 2019); (Sambandamurthi, 2015); (Techanamurthy et al., 2015); (Pudin, 2017); (Danker, 2015); (Tazijan et al., 2016); (Chew et al., 2018); (Juhary & Amir, 2017); (Abdullah & Azizan, 2018). The second largest group surveyed were the elementary school students and lecturers with two papers for each level done by Chun and Sathappan (2018); Vijaya and Shoup (2018); Rahman et al. (2019); Jones (2016). Finally, out of nineteen articles, three of them surveyed the undergraduate trainees, schoolteachers and preschool students with only one paper for each level. It was done by Singh et al. (2017); Ishak and Abu (2018) and Halili et al. (2014).

7.2. Methods

Table-3. Methodological approaches used in the selected articles.

No	Methodological approaches	No. of articles	References
1.	Survey	5	Rahman et al. (2019); Sambandamurthi (2015); Techanamurthy et al. (2015); Pudin (2017); Juhary and Amir (2017).
2.	Experiment	4	Raman et al. (2019); Chun and Sathappan (2018); Ishak and Abu (2018); Vijaya and Shoup (2018).
3.	Mixed Method	3	Danker (2015); Tazijan et al. (2016); Abdullah and Azizan (2018).
4.	Meta-Analysis	3	Singh et al. (2017); Jones (2016); Rahman et al. (2015).
5.	Design and Develop	2	Ali et al. (2019); Ali et al. (2019).
6.	Review	1	Halili et al. (2014).
7.	Qualitative	1	Halili et al. (2014).
8.	Qualitative	1	Chew et al. (2018).

Table 3 shows the findings of methodological approaches used in the selected articles. This analysis was meant to answer research question 2 which is "What are the methodological approaches used in the selected articles of flipped learning in 2015 to 2019?". From the analysis, it was found that the quantitative research design was the most frequently used method and the instrument used by five articles was a survey. The articles were by Rahman et al. (2019); Sambandamurthi (2015); Techanamurthy et al. (2015); Pudin (2017); Juhary and Amir (2017).

The second most common methodological approaches used was the experiment with four research done by Raman et al. (2019); Chun and Sathappan (2018); Ishak and Abu (2018); Vijaya and Shoup (2018). The research was conducted using pre and post-test of experimental and control group. The third and fourth ranked methods were mixed method and meta-analysis by Danker (2015); Tazijan et al. (2016); Abdullah and Azizan (2018) and Singh et al. (2017); Jones (2016); Rahman et al. (2015). The fifth ranked methods is the design and develop research design done by Ali et al. (2019); Ali et al. (2019). This research design requires the researcher to design a new framework or a module. This research design also demands several data analyses such as Fuzzy Delphi and Smart PLS. For the least methodological approaches used in the selected articles, the finding found that reviews done by Halili et al. (2014) and qualitative analysis done by Chew et al. (2018) ranked in the last place.

7.3. Disciplines

Table-4. Disciples done in the selected articles.

No	Discipline	No. of Articles	References
1.	English As A Second Language (ESL)	9	Rahman et al. (2019); Ali et al. (2019); Ali et al. (2019); Chun and Sathappan (2018); Ishak and Abu (2018); Pudin (2017); Tazijan et al. (2016); Vijaya and Shoup (2018); Halili et al. (2014).
2.	Multiple Disciplines	4	Jones (2016); Sambandamurthi (2015); Pudin (2017); Rahman et al. (2015); Juhary and Amir (2017).
3.	Engineering	3	Pudin (2017); Chew et al. (2018); Abdullah and Azizan (2018).
4.	Performing Arts	1	Danker (2015).
5.	Technical and Vocational Education and Training (TVET)	1	Singh et al. (2017).
6.	Culinary Arts	1	Techanamurthy et al. (2015).
7.	Information Technology (IT)	1	Raman et al. (2019).

In answering research question 3: "What are the disciplines done in the selected articles of flipped learning in 2015 to 2019?" the articles were categorized according to the field and the frequency was measured. The most field used in the selected articles was English as a Second Language (ESL) with majority of nine out of nineteen articles. The nine articles were by (Rahman et al., 2019); Ali et al. (2019); Ali et al. (2019); Chun and Sathappan (2018); Ishak and Abu (2018); Pudin (2017); Tazijan et al. (2016); Vijaya and Shoup (2018); Halili et al. (2014). The second ranked discipline were the multiple disciplines other than stated in the Table 4 done by four researchers; Jones (2016); Sambandamurthi (2015); Pudin (2017); Rahman et al. (2015); Juhary and Amir (2017). The third ranked was engineering with three research papers done by Pudin (2017); Chew et al. (2018); Abdullah and Azizan (2018). The last ranked were performing arts, technical and vocational education and training (TVET), culinary arts and information technology (IT) done by Danker (2015); Singh et al. (2017); Techanamurthy et al. (2015) and Raman et al. (2019) with only one article for each field.

8. CONCLUSION, DISCUSSION AND RECOMMENDATIONS

Flipped learning could benefit all. An online survey shows that 450 teachers are practicing flipped learning with improved performance and attitudes (Hamdan et al., 2013). Active and meaningful learning is achievable through flipped learning. Thus, teachers are satisfied and excited to use it. Teachers are informed that by having flipped learning, they have better insight into their students' level of understanding. They have better interaction with the students too (Roehl, Reddy, & Shannon, 2013).

Flipping the classroom makes a pedagogical shift from conventional and static content delivery to an active, collaborative classroom between students and teachers while having the application of content and reflection on learning experiences. By pushing out content materials outside the classroom, class is totally freed up to engage students in problem solving, active communication between teachers and peers, and teachers can assess students' understanding and give immediate feedbacks.

Flipping the classroom could challenge both students and teachers' roles in the classroom. Based on the findings, it can be concluded that undergraduate student is the most common group examined by researchers. Presumably the background of the researchers who are mostly lecturers in the universities makes undergraduate students easy to reach. Thus, there is a need to do more studies in flipped learning especially when surveying school and preschool teachers and students.

Surveys and experiments are the most dominant methodological approaches because surveys are easily done to reach out participants. It can be distributed through online or hard copies. Experiments are easy to handle especially in schools and universities where teachers and lecturers can control the experiment (with intervention) group and the control group to see the students' progress through pre and post-test, with and without intervention.

From this finding, it is clear that we need to do more studies specifically on the review of the past studies as well as the qualitative approach. As for the field or subject done in flipped learning, many papers have covered the ESL area mainly because language is easier to be taught compared to the other fields or maybe ESL lecturers or teachers have more exposure on the flipped learning approach than the other educators of the other fields. Thus, it is important to have more studies of flipped learning in the other area such as culinary, IT, TVET and performing arts in Malaysia.

Based on the selected articles, flipped learning undeniably has a constructive effect on education. It is also showed that flipped learning is suitable to be practised in any level and any field of education. Hence, it is a very flexible approach. The existing conventional teaching pedagogy should be shifted to ensure that our education system is able to produce better generations. Nonetheless, not many studies have been reported on the long-term effects of the integration of flipped learning approach. Thus, longitudinal studies of flipped learning should be done to see whether it is good to implement it in the long-term process. Finally, more studies can be done to see how

flipped learning can change both teachers' and students' critical thinking as well as to see the effectiveness of the flipped learning use.

REFERENCES

Abdullah, B., & Azizan, B. M. T. (2018). *A flipped classroom technique in improving students' grade of transport phenomena coursee*. Paper presented at the Proceedings - 2017 7th World Engineering Education Forum, WEEF 2017- In Conjunction with: 7th Regional Conference on Engineering Education and Research in Higher Education 2017, RCEE and RHEd 2017, 1st International STEAM Education Conference, STEAMEC 201, (November 2018).

Ali, M. M. A., Yunus, M. M., Hashim, H., Hidayat, W., & Zaman, M. S. (2019). Experts' agreement towards student engagement constructs for a strategic development of a flipped learning framework for ESL context. *International Journal Academic Research Business and Social Sciences, 9*(3), 1309-1317.Available at: https://doi.org/10.6007/IJARBSS/v9-i3/5806.

Ali, M. M. A., Yunus, M. M., Hashim, H., Rahim, A. A. A., & Khamis, N. Y. (2019). Strategic development of flipped framework on educators and learning constructs for ESL context: The experts' agreement. *International Journal Academic Research Business and Social Sciences, 9*(3), 1309–1317.Available at: https://doi.org/10.6007/IJARBSS/v9-i3/5805.

Bergmann, J., & Sams, A. (2012). *Flip your classroom: Reach every student in every class every day*: International Society for Technology in Education.

Bergmann, J. (2011). Flipped classroom offers new learning path. *Electronic Education Report, 18*(23), 1-3.

Bridgeman, A. J. (2013). *Active learning online and in class: Guided inquiry in first year chemistry*. Paper presented at the Sydney Teaching Colloquium, The University of Sydney.

Chen, Y., Wang, Y., & Chen, N.-S. (2014). Is FLIP enough? Or should we use the FLIPPED model instead? *Computers & Education, 79*, 16-27.Available at: https://doi.org/10.1016/j.compedu.2014.07.004.

Chew, E., Jones, L. J. N., & Wordley, S. (2018). Flipping or flapping? investigating engineering students' experience in flipped classrooms. *On the Horizon, 26*(4), 307–316.Available at: https://doi.org/10.1108/OTH-04-2017-0014.

Chun, T. W., & Sathappan, R. (2018). The effectiveness of using flipped classroom approach to teach adjectives to Malaysian Year 4 Chinese ESL learners. *The English Teacher, 47*(2), 53-63.

Danker, B. (2015). Using flipped classroom approach to explore deep learning in large classrooms. *IAFOR Journal of Education, 3*(1), 171-186.Available at: https://doi.org/10.22492/ije.3.1.10.

Davies, R. S., Dean, D. L., & Ball, N. (2013). Flipping the classroom and instructional technology integration in a college-level information systems spreadsheet course. *Educational Technology Research & Development, 61*(4), 563-580.

Defour, M. (2013). Flipped classrooms' spreading in Wisconsin. *Community College Week, 25*(16), 10.

Enfield, J. (2013). Looking at the impact of the flipped classroom model of instruction on undergraduate multimedia students at CSUN. *TechTrends, 57*(6), 14-27.Available at: http://dx.doi.org/10.1007/s11528-013-0698-1.

Fulton, K. (2012). Upside down and inside out: Flip your classroom to improve student learning. *Learning & Leading with Technology, 39*(8), 12-17.

Goodwin, B., & Miller, K. (2013). Research says evidence on flipped classrooms is still coming in. *Technology Rich Learning, 70*(6), 78-80.

Halili, S. H., Razak, R. A., & Zainuddin, Z. (2014). *Enhancing collaborative learning in flipped classroom*. Paper presented at the International Conference on Science, Engineering and Built Environment, 9(April), 24–27.

Hamdan, N., Mcknight, P., Mcknight, K., & Arfstrom, D. (2013). *A review of flipped learning*: Pearson Research Network.

Howitt, C., & Pegrum, M. (2015). Implementing a flipped classroom approach in postgraduate education: An unexpected journey into pedagogical redesign. *Australasian Journal of Educational Technology, 31*(4), 458–469.Available at: https://doi.org/10.14742/ajet.2439.

Ishak, M. F. F., & Abu, A. G. (2018). EduLite exploring TPACK domains of Malaysian non-option ESL teachers in an online flipped learning course through Blendspace. *Journal of English Education, Literature and Culture, 3*(2), 110–124.Available at: https://doi.org/10.30659/e.3.2.110-124.

Jones, M. (2016). A case study of blended learning in higher education in Malaysia: Flipped, flopped or forgotten? *Teaching Education*(June), 132–137.

Juhary, J., & Amir, A. F. (2017). Flipped classroom at the defence university. *Journal of Engineering and Applied Sciences, 12*(14), 3735–3739.Available at: https://doi.org/10.4995/head18.2018.8093.

Mayer, R. E. (2009). *Multimedia learning* (2nd ed.). New York: Cambridge University Press.

McGivney-Burelle, J., & Xue, F. (2013). Flipping calculus. *Primus, 23*(5), 477-486.

Milman, N. B. (2012). The flipped classroom strategy: What is it and how can it best be used? *Distance Learning, 9*(3), 85-88.

Pudin, C. S. J. (2017). Exploring a flipped learning approach in teaching grammar for ESL students. *Indonesian Journal of English Language Teaching and Applied Linguistics, 2*(1), 51-64.Available at: https://doi.org/10.21093/ijeltal.v2i1.47.

Rahman, S. F. A., Yunus, M. M., & Hashim, H. (2019). A technology acceptance model (TAM): Malaysian ESL lecturers' attitude in adapting flipped learning. *Malaysian Education Journal, 44*(3), 43-54.Available at: https://doi.org/10.17576/jpen-2019-44.01si-04.

Rahman, A., Aris, B., Rosli, M. S., Mohamed, H., Abdullah, Z., & Zaid, N. M. (2015). *Significance of preparedness in flipped classroom.* Paper presented at the 3rd International Conference on Internet Services Technology and Information Engineering (ISTIE).

Raman, A., Rathakrishnan, M., & Thannimalai, R. (2019). Flipping the undergraduate classroom: A case study. *The Journal of Social Sciences Research*(51), 134–138.Available at: https://doi.org/10.32861/jssr.51.134.138.

Roehl, A., Reddy, S. L., & Shannon, G. J. (2013). The flipped classroom: An opportunity to engage millennial students through active learning strategies. *Journal of Family & Consumer Sciences, 105*(2), 44-49.Available at: https://doi.org/10.14307/jfcs105.2.12.

Rosenberg, T. (2013). Turning education upside down. The New York Times. Retrieved from http://opinionator.blogs.nytimes.com/2013/10/09/turning-education-upside-down/. [Accessed 2013, October 9].

Sambandamurthi, A. (2015). Experiences and challenges of using flipped classroom by postgraduate students: A preliminary comparative study between India and Malaysia. *Asian Journal of Humanities and Social Studies, 3*(5), 376–381.

Sams, A., & Bergmann, J. (2013). Flip your students' learning. *Technology-Rich Learning, 70*(6), 16-20.

Shazali, S. S., Shamsudin, Z. H., & Yunus, M. M. (2019). Instagram: A platform to develop student's writing ability. *International Journal of Academic Research in Business and Social Sciences, 9*(1), 88-98.Available at: https://doi.org/10.6007/ijarbss/v9-i1/5365.

Singh, H., Singh, C. K. S., Mohtar, T. M. T., & Mostafa, N. A. (2017). A review of research on flipped classroom approach for teaching communication skills in English. *International Journal of Academic Research in Business and Social Sciences, 7*(10), 100-118.Available at: https://doi.org/10.6007/ijarbss/v7-i10/3362.

Springen, K. (2013). Flipped. *School Library Journal, 59*(4), 23.

Sun, Y., & Gao, F. (2019). Exploring the roles of school leaders and teachers in a school-wide adoption of flipped classroom: School dynamics and institutional cultures. *British Journal of Educational Technology, 50*(3), 1241-1259.Available at: https://doi.org/10.1111/bjet.12769.

Tazijan, F., Murugan, A., Rahim, S. A., Mohamed, R., & Mathai, E. J. (2016). A survey of flipped learning approach in the ESL context. *Asian Journal of Education and E-Learning, 4*(2), 78–84.

Techanamurthy, U., Alias, N., & Dewitt, D. (2015). *Readiness for flipped learning among culinary arts students. In research gate.* Paper presented at the Proceedings of the National Seminar of the Dean of the University's Dean of Education.

Tucker, B. (2012). The flipped classroom. *Education next, 12*(1), 82-83.

Vijaya, K. S., & Shoup, D. L. B. (2018). Effectiveness of flipped learning on disruptive behaviours among Malaysian elementary school students. *Advanced Science Letters, 24*(5), 3487-3492.Available at: https://doi.org/10.1166/asl.2018.11419.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes.* Cambridge: Harvard University Press.

Woon, W. L., & Yunus, M. M. (2019). Social influence aspect affects ESL learner ' s acceptance level. *Asia Pacific Institute of Advanced Research (APIAR), 5*(2), 58–64.

Yunus, M. M. (2018). Innovation in education and language learning in 21st Century. *Journal of Sustainable Development Education and Research, 2*(1), 33-34.Available at: https://doi.org/10.17509/jsder.v2i1.12355.

Zaki, A. A., & Yunus, M. M. (2015). Potential of mobile learning in teaching of ESL academic writing. *English Language Teaching, 8*(6), 11-19.Available at: https://doi.org/10.5539/elt.v8n6p11.