

Recent Trends of Blended Learning and Flipped Classroom in Malaysia

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Abstract

The classroom is where the student and teacher interact, while traditional education uses a Face-to-Face classroom. The unprecedented COVID-19 forced education to shift into an online classroom. Still, numerous researches demonstrate that the pedagogical quality in online classrooms is thus compromised as the educators tend to convert existing face-to-face curriculum that less prioritize intellectual interaction into online ways. Blended learning is not a new yet effective teaching pedagogy, which seems suitable to overcome the challenges as mentioned above as it is a combination of traditional and online modes. Thus, this article summarizes the current trend of blended learning implementation in the Malaysian setting into valuable insight for the practitioner to redesign their pedagogy to meet new norms. This paper assessed and analyzed a total of 22 recent publications that extracted from the Web of Science Database based on three themes that are participant, instrument, and disciplinary. All researches address higher education context, mainly the students' perspectives and neglecting other stakeholders' perspectives. Blended learning is proven practical in multidisciplinary but independent curriculum, and pedagogy redevelopment is mandated. The quantitative methodology is preferable by the researcher in the identification of critical governing factors. Overall, the context of blended learning development in Malaysia remains progressively developing by time. In conclusion, the practice of blended learning implementation is getting diffused in Malaysia due to its flexibility and versatility. However, such effective pedagogy lay on collaborative efforts between various stakeholders, including educators, students, institutional management, policymakers, and parent.

Keywords: blended learning, COVID-19, education, flipped classroom, pedagogical quality

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Introduction

The classroom is where the student and teacher interact, act as the vital component of formal education. A classroom is a place that the teaching and learning process occurs; the educator teaches the knowledge content while the learner response to the delivered content. Wasriep and Lajium (2019) indicated creativity, critical thinking, collaboration, and communication are the four crucial components in the contemporary classroom. The education industry traditionally uses the Face-to-Face classroom, while the unprecedented COVID-19 pandemic forced education to shift online and virtually conducted. Digital transformation and technology advancement is substantially nourishing the pedagogical quality. Contemporary education shall be learner-centered on satisfying varying students' wishes. Pedagogical innovation is one feasible solution to improve pedagogical quality (Naz and Murad, 2017). Pedagogical innovation is largely influenced by educational policy, objectives, and course content. Enhancement of pedagogical innovation could be a transformation of pedagogy, learning styles, teaching strategy, classroom culture, and communication loop. However, numerous recent researches, including Mohd Basar, Norhaini Mansor, Azhar Jamaludin, and Salwana Alias (2021); Ramli, Majid, and Badyalina (2020), demonstrate that the pedagogical quality in online classrooms is thus being compromised amid pandemic. The main reason is that the educators tend to convert existing face-to-face curriculum that less prioritize intellectual interaction into the online ways. Lytras, Sarirete, and Damiani (2020) stated that the current paradigm change is to shift the role of an educator from a content deliverer to a co-partner towards achieving significant knowledge transfer. Numerous new forms of innovative classrooms were introduced to meet such needs. At the same time, blended learning is not a unique yet effective teaching pedagogy that seems suitable to overcome such challenges as it is a combination of traditional and online ways. Blended learning combines face-to-face and online teaching methods as a whole to make classroom interaction effective. Accessibility and flexibility are two out of many critical criteria relevant to online pedagogy (Dhawan, 2020).

Su Ping, Verezub, Adi Badiozaman, and Chen (2020) explained that the flipped classroom is one of many blended learning models that enabled the student to learn the knowledge content online before the actual class. The student spends their real class time on practice-oriented task to reconsolidate the learning. The review of Siti Fatimah, Md Yunus, and Hashim (2019) disclosed that flipped classrooms have been practiced in the Malaysian education system, both the pre-university level and the higher education level. One of the possible reasons for the practicability of flipped classrooms as a contemporary pedagogy is that, as Apaydin and Kaya (2020) explained, both Generation Z and Alpha prefer quick and concentrated forms of the message. Generation Alpha has more exhibit behavior than Generation Z; their learning track is fast but quickly bored. Similarly, Hashim and Shaari (2020) noted that the flipped classroom pedagogy suits the learning behavior of millennium and Generation Z because of immediate learning responses and feedback. The unexpected COVID-19 situation causes lots of social change. Social distancing hinders learning effectiveness and reduces the pedagogical quality of online learning. While flipped classroom seems socially suitable and pedagogically practical to the Malaysian education environment, thus, this article aims to summarize the current trend of

blended learning implementation in the Malaysian setting into a useful value for the practitioner to redesign their pedagogy to meet the new norms.

Literature Review

The overview of Siti Fatimah et al.(2019) demonstrated the positive practicability of flipped classrooms in Malaysian environment. The flipped classroom is applicable regardless of varying disciplinary and education levels. The researchers evaluated the effectiveness of flipped classrooms from various stakeholders' perspectives. Earlier day, Zainuddin and Attaran (2016) found that the students at the University of Malaya appreciated the flexibility offered by flipped classrooms as students can relearn the given content based on their needs and schedule. The attitude test conducted by Lee (2019) among parents revealed that most flipped classroom parents could observe their children felt happier and motivated in the learning. The majority of flipped classroom parents noticed healthy communication inside the flipped classroom. Hashim and Shaari (2020) found that teachers commonly agreed that flipped classroom has more advantages over the traditional classroom. However, the effectiveness is dependent mainly on the adequacy of administrative support, sufficient resources, and facilities supplied.

Recently, more researchers are evaluating the effectiveness of online flipped classrooms in tackling the compromised pedagogical quality in the time of the pandemic. Azmin et al. (2021) noted that although more than 50% of students could accept the online flipped classroom approach, inaccurate selection of video lectures may lead to more deteriorate pedagogical quality. Moreover, Daud, Yunus, Juhari, Hassan, and Pauzi (2021) discovered that the medical student felt more comfortable when flipped classroom was additionally complemented with a Kahoot quiz. The overview of Low et al. (2021) written the advantages of the flipped classrooms, including self-regulated learning, active communication, while the existing barriers in the time of pandemic are connectivity issues, device issues, and facility issues. Furthermore, Bin et al. (2021) pointed that additional challenges to online learning include competency of a teacher; self-discipline of a student; readiness and determination of a managements; as well as financial and technical aid of the institution.

Research Method

This research paper utilizes the secondary data presented in the literature environment, by only examining the journal papers extracted from the Web of Science Database using content analysis. Using three keywords as search formula, only the journal papers that match the criteria were included in the reviewing works. The three selected keywords are flipped classroom, Malaysia, blended learning. As of 15 September 2021, a total of 130 related papers appeared to match the searching criteria. Nonetheless, only 39 cited references published within the year 2019 to 2021 that were highly relevant were selected as critical data. Figure one demonstrates the overall research method.

Summary of Data

Table one gives a result summary with a descending order arrangement by publication year, followed by ascending order of the authors' names.

Table 1. *Summary of result*

No	Instrument	Participant	Discipline	Subject
1	Systematic review	64 studies between 2006 - 2018	Multiple	To examine the influences of information systems on technology acceptance in adopting blended learning, e-learning is the best tool in managing the blended classroom in higher education. The author suggests examining the sustainability and applicability of educational purposes.
2	Factor analysis	792 undergraduate students	Multiple	To develop and validate measurement scales on students' experience, Course design, learning experience, and personal factors are three critical factors in determining students' satisfaction toward blended learning.
3	Self-reflection of accounting academician	14 Australia, Indonesia, Malaysia	Accounting	To analyze the delivery model in the virtual classroom during a pandemic, the course delivery is effective with a combination of existing resources, learning management system, and support. At the same time, online assessment is the hiccup as student cheating is hardly avoided in the virtual classrooms.
4	Quasi experimental analysis	- 60 polytechnic students of ESL learner	Linguistic	To measure the effectiveness of blended learning in improving English writing skills, blended learning has proven more effective as a compared traditional method but largely governed by students' initiation and learners' self-discipline.
5	Mixed of survey and interview	178 Malaysian medical students	Medical	To evaluate readiness, self-regulation, and challenges of medical students in adapting to online learning. The barriers are an uncondusive learning environment, unstable connectivity.
6	Mixed of survey and discussion board	Postgraduate ESL student	Linguistic	To establish the relationship between Community of Inquiry and Global Englishers' participation. The author highlights the importance of Global Englishers' consciousness in empowering the future research possibilities and output.
7	Quantitative online survey	1811 Malaysian universitys' students	Multiple	To develop a predictor model in determining student acceptance and deployment on blended learning by planned behavior theory in Malaysian perspective, major causal factors are attitude, norm, perception, behavior, and self-efficacy.
8	Quantitative survey questionnaire	563 Malaysian universitys' students	Multimedia	To measure the causal relationship between self-regulated learning on the enhancement of digital literacy, three major causal factors on digital literacy are metacognitive knowledge, resource management, and motivational belief.
9	Quantitative survey	- 223 IT administrator	IT	To evaluate the causal relationship between institutions' administration readiness on diffusion initiative of blended learning, five factors are institutional structure, resource support, technology infrastructure, management strategies, and ethical consideration.

10	Quantitative survey	256 Malaysian pharmacy students	Pharmacy	To evaluate the acceptance and perception of pharmacy students in flipped classrooms, results disclose low acceptance and unfavorable impressions of flipped classrooms among students due to inappropriate use and additional workload on the student.
11	Online survey	409 respondents	Multiple	To examine mediating causal relationship of peer influence on online learning, learning satisfaction is fully mediated by self-discipline, while students' ability to learn with peers significantly influences their happiness.
12	Open ended survey	- 284 online survey	Multiple	To evaluate the readiness of Malaysian university students in adapting online learning, results revealed three lacking are physically, environmentally, and psychological perspectives; the existing challenge is to shift existing curriculum and assessment into fully online.
13	Overview	Literature review	Multiple	To develop a blended learning module for postgraduate research methodology course, eight proposed modules can integrate traditional classrooms with web-based approaches.
14	Semi structured interview	18 interview responses	Linguistic	To trace the effectiveness of the flipped classroom in writing class, the result revealed greater time allocation spent before class, extensive practical, enhanced engagement, rich communication, and instant feedback in class and the shortcoming is boredom and lengthy.
15	Quasi experimental	30 MCQ	Culinary	To evaluate the effectiveness of problem-solving-based classroom in culinary art program but no significant observed between intervention, proven similar effectiveness.
16	Quantitative analysis	41 students' test result	Science	To evaluate the effectiveness of the formative e-assessment procedure integrated into a blended learning setting, students' performance enhanced as learning consolidation easier.
17	Quantitative survey	87 students and staffs	Multiple	To evaluate effectiveness from learners' and staffs' perspectives, the causal factors are attitude, behavior, satisfaction, resource management, and ease of use.
18	Quasi experimental	137 grade point	Pharmacy	To measure the effectiveness of flipped classrooms in improving the academic performance of low pass rate courses, students able to achieve more excellent academic performance.
19	Qualitative interview	15 lecturers	Multiple	To evaluate the lecturers' perspective on MOOC, identified themes are educational change, instructional design, motivation, and challenges.
20	Cross sectional study	45 students' grade	Dentistry	To compare the effectiveness of blended classroom to traditional didactic lecture on dentistry subject, higher score mark for blended classroom student compared to a conventional classroom.
21	Systematic review	19 research articles	Multiple	To review educational level, instruments, and disciplinary of flipped approach in Malaysia, most studies have positive output, and it is versatile to apply to all education levels and disciplinaries.
22	Qualitative survey	141 faculty staff and 445 students	Linguistic	To compare the quality blended course between the United States and Malaysia context, the similarity is institution has varying quality priority while the difference is unique trajectory.

- 1.(Al-Marroof et al., 2021); 2.(Bhagat et al., 2021); 3.(Djajadikerta et al., 2021); 4.(Hassan et al., 2021), 5.(Roslan and Halim, 2021); 6.(Smidt et al., 2021); 7.(Anthony Jnr et al., 2020); 8.(Anthonysamy et al., 2020); 9.(Bokolo et al., 2020); 10.(Chan et al., 2020); 11.(Lim et al., 2020); 12.(Nassr et al., 2020); 13.(Rahim et al., 2020); 14.(Su Ping et al., 2020); 15.(Techanamurthy et al., 2020); 16.(Wong et al., 2020); 17.(Anthony et al., 2019); 18.(Goh and Ong, 2019); 19.(Nagaletchimee, 2019); 20.(Paul et al., 2019); 21.(Siti Fatimah et al., 2019); 22.(Smidt et al., 2019).

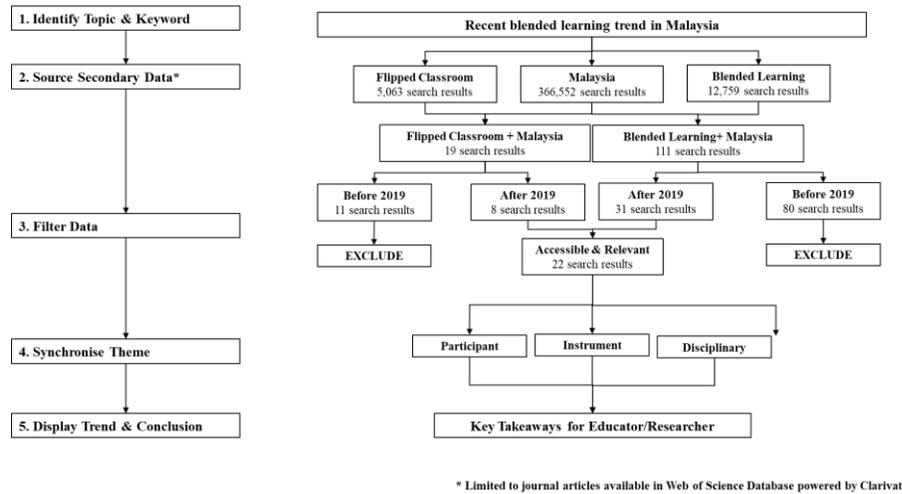


Figure 1. Research method

The Practicability in Malaysia Context

The discussion pertaining to the practicability of blended learning and flipped classrooms will be explained based on three perspectives, including participant, instrument, and disciplinary.

Participants

Table two demonstrated the level of participants of the analyzed articles. Most of the research participant dataset is students in Malaysia, including thirteen, are undergraduate student grouping, one postgraduate student grouping, and two research articles focusing on a mixture of students and academicians grouping. The student is not the sole stakeholder in education; both academicians and administrative personnel are deeply integrated into the educational ecosystem. Therefore there are three research articles, including Djajadikerta et al. (2021), Bokolo et al. (2020), Nagaletchimee (2019), that evaluated how institutional, mainly the staff contribute to the effectiveness of blended learning. The study of Nagaletchimee (2019) used a qualitative case study to identify the challenges faced by fifteen lecturers who were familiar with blended learning when they wanted to make a change from the traditional classroom. The results revealed that practical workshops play a vital role in the transformation effort. Although the academician is not rejecting the transition, some obvious challenges are that the academician would not be able to pass through by themselves sorely.

Similarly, the quantitative work of Bokolo et al. (2020) on e-learning administrative staff disclosed that institutional readiness significantly influences the adoption rate of blended learning. The author developed a model for evaluating institutional readiness on blended learning. More recently, Djajadikerta et al. (2021) noted that without compliance technologies support from the university, such as establishing of a learning management system.

Even though none of the participants in the 22 cited references measured the response of pre-university students, the systematic review of Siti Fatimah et al. (2019) revealed the practicability of the flipped classrooms at different educational levels in the Malaysian education system. In the past, several flipping learning has been implemented in both the preschool and elementary school levels in Malaysia. In addition, a previous researcher, Chun and Sathappan (2020), conducted the flipped classroom on Year 4 elementary school students and proven effective.

Table 2. *Participant type of the analyzed articles*

Participant	Frequency	Author
Undergraduates	13	Bhagat et al. (2021), Hassan et al. (2021), Roslan and Halim (2021), Anthony Jnr et al. (2020), Anthonysamy et al. (2020), Chan et al. (2020), Lim et al. (2020), Nassr et al. (2020), Su Ping et al. (2020), Techanamurthy et al. (2020), Wong et al. (2020), Goh and Ong (2019), Paul et al. (2019)
Articles	3	Al-Marroof et al. (2021), Rahim et al. (2020), Siti Fatimah et al. (2019)
Staff	3	Djajadikerta et al. (2021), Bokolo et al. (2020) Nagaletchimee (2019)
Mixture	2	Anthony et al. (2019), Smidt et al. (2019)
Postgraduate	1	Smidt et al. (2021)

Disciplinary

Generally, blended learning is practical to all disciplines, as illustrated in Table three. However, linguistic is still a good discipline that led the transformation. Four articles that focus solely on linguistic, mainly English as a second language. The review work of Siti Fatimah et al. (2019) disclosed the similar observation that nine out of nineteen articles reviewed focused on English as a second language. Hassan et al. (2021) have proven that blended learning significantly improves students' writing skills, while Smidt et al. (2021) believed that blended learning empowers global Englishers in developing possible research opportunities. Earlier, Su Ping et al. (2020) used qualitative data to illustrate that linguistic students have positive experiences with blended learning. Contradictory, the authors noted that the weaknesses of their conducted mode are very time-consuming as more thorough preparation was compulsory for efficient learning.

Interestingly, Smidt et al. (2019) evaluated the meaning of quality between American and Malaysian contexts and found that the experience is somewhat dissimilar. Malaysia as a developing mode is prioritized on a technological end while American, as a skilled mode, focused more on standardization. Therefore, it could be summarized that blended learning is very versatile to any disciplinary knowledge as shown in Table three that blended learning was also applied to other disciplines, including information technology, pharmacy, accounting, medical, culinary, dentistry, science. Despite blended learning being proven practical in

multidisciplinary, the effectiveness is governed by independent curriculum and pedagogy redevelopment to suit the learning behavior and subject matter. The systematic review of Al-Marooof et al. (2021) noted that the major of the studies are focused on measuring how effective blended learning is in various disciplinary. The authors intend to highlight here is that the comparison of effectiveness among different educational punitive is an exciting topic that untapped and worth further exploring.

Table 3. *Disciplines done of the analyzed articles*

Disciplinary	Frequency	Author
Multiple	9	Al-Marooof et al. (2021), Bhagat et al. (2021), Anthony Jnr et al. (2020), Lim et al. (2020), Nassr et al. (2020), Rahim et al. (2020), Anthony et al. (2019), Nagaletchimee (2019), Siti Fatimah et al. (2019)
Linguistic	4	Hassan et al. (2021), Smidt et al. (2021), Su Ping et al. (2020), Smidt et al. (2019)
Technology	2	Anthonymsamy et al. (2020), Bokolo et al. (2020)
Pharmacy	2	Chan et al. (2020), Goh and Ong (2019)
Accounting	1	Djajadikerta et al. (2021)
Culinary	1	Techanamurthy et al. (2020)
Dentistry	1	Paul et al. (2019)
Medical	1	Roslan and Halim (2021)
Science	1	Wong et al. (2020)

Research Instruments

Despite the fact that every researcher has own pursuit of blended learning, the quantitative method is a better research methodology as compared to the qualitative approach, systematic review, reflection, etc., as shown in Table four. Among eight research that adopts the quantitative method, four of them utilized the partial least square method in determining significant relationships in the blended learning framework. Anthony et al. (2019) evaluated the critical factors on how the institutional influencing blended learning adoption, while Anthony Jnr et al. (2020) evaluated the essential elements on students adoption in university. Similarly, Anthonymsamy et al. (2020) investigated how students' self-discipline enhanced digital literacy in blended learning experiences. Lastly, Bhagat et al. (2021) constructed a model for evaluating students' learning experiences. There is a trend that besides students' expertise, institutional policy and students' initiatives also play equal importance. Worth noting that quasi-experimental research design is also a sound research methodology in comparing the effectiveness of blended learning to traditional mode, including the students' writing skills (Hassan et al., 2021), students' grades (Goh and Ong, 2019), and students' problem-solving skills (Techanamurthy et al., 2020). Gopalan et al. (2020) stated that a quasi-experimental research design could effectively reflect how the intervention causes significant change to the observed outcome without yielding a little treated effect.

Table 4. *The methodology used in the analyzed articles*

Methodology	Frequency	Author
Quantitative	8	Bhagat et al. (2021), Anthony Jnr et al. (2020), Anthonysamy et al. (2020), Bokolo et al. (2020), Chan et al. (2020), Lim et al. (2020), Nassr et al. (2020), Anthony et al. (2019), Paul et al. (2019)
Interview	3	Su Ping et al. (2020), Wong et al. (2020) Nagaletchimee (2019)
Quasi-experiment	3	Hassan et al. (2021), Techanamurthy et al. (2020), Goh and Ong (2019)
Review	3	Al-Marroof et al. (2021), Rahim et al. (2020), Siti Fatimah et al. (2019)
Mixed	2	Roslan and Halim (2021), Smidt et al. (2021)
Qualitative Survey	1	Smidt et al. (2019)
Reflection	1	Djajadikerta et al. (2021)

Discussion and Conclusion

The blended learning and flipped classroom were not new pedagogy in Malaysia but getting more attention and enhancement, especially amid pandemics. Research output demonstrated that blended learning is proven practical in multidisciplinary but independent curriculum and pedagogy redevelopment is mandated to make it efficient. The quantitative methodology is still preferable in the Malaysian research context because blended learning development is still immature compared to developed nations. Most of researchers tend to identify the critical governing factors on pedagogy change from traditional learning into blended learning. However, almost all of them are lean toward the higher education context, mainly the students' perspective.

Nonetheless, other stakeholders' perspectives, such as policymakers and institutional staff, shall be considered in blended learning adoption. Other relevant parties' input, such as academicians, community, and industry players, could also give a more comprehensive understanding in expediting the adoption. This review article aims to provide helpful insight for practitioner to redesign their pedagogy to meet new norms. Hence, in conclusion, the practice of blended learning implementation is getting diffused in Malaysia due to its flexibility and versatility. However, such effective pedagogy lay onto collaborative efforts between various stakeholders, including educators, students, institutional management, policymakers, and parent.

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