SMART
(Journal of English Language Teaching and Applied Linguistics)
Volume 10, No. 1, January 2024 Page. 44-61
p-ISSN: 2356-2048 e-ISSN: 2356-203x

SYNCHRONOUS AND ASYNCHRONOUS INTEGRATED PROJECT-BASED LEARNING IN ENGLISH LANGUAGE LEARNING

Nyayu Yayu Suryani[1], Arum Putri Rahayu[2], Tri Rohani[3], Adiyono[4].
[1]STIK Siti Khadijah Palembang
[2]STAI Ma'arif Magetan
[3]STKIP Muhammadiyah Pagaralam,
[4]STIT Ibnu Rusyd,
Email Correspondence: nyayuyayusuryani@gmail.com

Abstract

Project Based Learning (PjBL) integrated synchronous and asynchronous is a learning method that combines face-to-face classes and online strategies. The aim of this study was to see how the integration of synchronous and asynchronous learning with PjBL in English language learning can increase students' creativity and collaboration. This study employed both qualitative and quantitative methods. The subjects of this study were students from the Islamic Education. The instruments were used test and questionnaire. The findings showed that the integrated synchronous and asynchronous PjBL method was well-received by the students who were using it to learn English. The synchronous and asynchronous PjBL method of teaching English improves its efficacy and encourages students' creativity and collaboration when utilizing technology.

Keywords: *Artificial Intelligence Application, Curriculum Vitae*

INTRODUCTION

The number of people using the Internet worldwide is growing. This occurrence demonstrates the rise in potential distant learners that the Internet community has seen (Yuzer, 2007).As web-based learning technology has developed, hybrid teaching approaches have proliferated widely (Karaaslan et al., 2018).Through the application of technology-enhanced learning techniques, technology will be incorporated into education to assist in developing 21st-century competencies (Rahmawati et al., 2020) . Moreover, there are two learning alternates of processes: synchronous and asynchronous (Quezada et al., 2020). Synchronous processes make use of a variety of media and technological tools, such as video calls, Microsoft Teams, Zoom, Google Meet, and more (Jr et al., 2021). Meanwhile, Asynchronous (self-study) learning is also available through online courses and educational tools like Google Forms, WhatsApp, and Classroom. In other words, students learn independently or with others at home.

Synchronous education is integrated into distance education at various levels and capacities, providing students and instructors with a virtual web conferencing environment that allows them to virtually coexist in a shared real-time space even though they may be geographically separated (Phelps & Vlachopoulos, 2020). During set class times, teachers and students connect online using video conferencing software to attend synchronous (real-time) online lectures where lecturers present courses. During lectures, students can ask questions orally or through real-time text chat.. However, to assess the effectiveness of the online learning model's guiding principles and learning outcomes, rigorous and ongoing evaluation is required (Khalil et al., 2020). A synchronous online learning model where teaching and learning processes coincide in real time helps blur the barriers of physical boundaries of online learning for students (Tuong DINH, 2023). Teachers create lecture videos for asynchronous lectures and transfer them to a learning management system (LMS) or a whiteboard YouTube channel so that students can access them whenever it is most convenient for them (Jr et al., 2021).

The statement above shows that synchronous and asynchronous are blended learning methods that students' learning is actively supported and facilitated in online learning (Ali, 2020). The advantages of synchronous and asynchronous strategies are combined in the blended online learning strategy, which is regarded as the most practical adaptation method (Lapitan et al., 2021). Studies show that during the COVID-19 period, three significant changes in education. According to Zhao & Watterston, (2021) curricula that are developmental, personalized, and ever-evolving; pedagogy that is student-centered, inquiry-based, authentic, and purposeful; and synchronous and asynchronous learning are combined in the delivery of instruction. Because it combines the benefits of both synchronous and asynchronous strategies, the blended online learning strategy is regarded as the most practical approach to adopt (Lapitan et al., 2021).

Since professional lifesavers and synchronous and asynchronous learning technologies have advanced significantly over the past 30 years and will continue to do so for decades to come, many educators reluctantly and nervously switched to online environments while using synchronous tools like Zoom for most of 2020 (Bonk, 2020). While the pandemic left many feeling overburdened with issues and difficulties, this is

the ideal time to look 30 years into the future of learning and to develop novel pedagogical approaches, projects, and entire ecosystems that advance those innovations and learning possibilities. However, in the findings on the other hand, there are several shortcomings in online learning according to Khoza & Biyela, (2020) a lack of critical reflection (love/passion, flexibility/creativity, courage, etc.) is revealed by the decolonization of lecturers' and students' knowledge of technology, pedagogy, and content in online learning, which makes individual lecturers the centre of the subject matter.

Some ways of implementing PjBL include involving students in creating new products.Project-based learning as a teaching method has been developed in the 21st century (Viro & Joutsenlahti, 2018). Project-based learning methods have recently become very popular in education (Trishchenko, 2018). According to Ekİzer, (2021)the fact that PjBL is becoming more widespread is: At first, it began to be applied to specific disciplines, and with limited age groups, later its use was extended to all disciplines and all levels. Project-based learning is a learning model that involves active students in solving problems. It is carried out in groups or independently through scientific stages at a particular time, pouring into a product to be presented to others. According to Mahasneh & Alwan, (2018) students who learn with the PjBL method become creative and constructive, considering the variety of projects they do, ranging from creating learning portfolios, modeling from schemes, producing videos, designing websites, and others. A contemporary skill set on the rise includes creativity, curiosity, critical thinking, entrepreneurship, collaboration, communication, a growth mindset, global competence, and various skills with different names (Zhao & Watterston, 2021). The implementation of the project encourages students to engage in innovation in creating teaching materials using technology. This provides opportunities for students to collaborate and communicate with each other. So that it will improve students' creative thinking skills and self-regulated learning (Zakiah & Fajriadi, 2020) .

Research Lou & Kim MacGregor, (2004) Findings from 2 case studies, one case study focusing on inter-group mentoring and one case study focusing on inter-group project reviews, revealed that both strategies were good on the students and had a positive impact on collaborative learning skills, knowledge revealed through their online dialogues, and project performance of all students, especially the less effective

groups. The results of this study provide some insight into the process of computer-supported collaborative learning among students in the context of higher education. For four weeks, project-based learning in virtual groups improved academic knowledge because they could use more ideas and concepts to support their planning of the subject (García, 2016). Online collaborative learning and PBL critically challenge some of Taiwan's culturally entrenched traditions. The study yields practical insights into the applications of online collaborative learning and PjBL in higher education and implications for the cross-cultural implementation of online learning (Zhang, 2019). On the other hand, studies by Baser et al., (2017)show that virtual spaces such as online tutorials, forums, and collaborative and communicative tools are beneficial for collaborative PjBL, and many studies have tried to support student collaboration settings using computer-supported collaborative learning effectively will enrich learning outcomes (Splichal et al., 2018).

Based on the study above, this study contributes to describing the implementation of project-based learning that creates student creativity and collaboration synchronously and asynchronously, as well as student opinions about using project-based learning. This research gap is synchronous and asynchronous integrated project-based learning, which creates an ideal environment for higher education in the use of technology both offline and online. This study of synchronous and asynchronous integrated PjBL method is centered on English language learning. Students of the Islamic Education Study Program UIN Raden Fatah still need more creativity and collaboration in learning English integrated with technology. This study has to reveal the answers of two questions: How can synchronous and asynchronous learning that is integrated with PjBL help students learn English more creatively and collaboratively? And what do students think about synchronous and asynchronous English learning integrated with PjBL after implementation?

RESEARCH METHOD

The research methods used in this study were qualitative and quantitative. The subjects of this study were 65 students of the Islamic Education study program UIN Raden Fatah Palembang. The research was conducted for two months. Besides to collect the data, questionnaires also been used to find students' opinions about

synchronous and asynchronous integrated PjBL learning in English courses through Google Forms. The questionnaire was adapted from various research sources related to PjBL learning integrated with synchronous and asynchronous technology. Validation and reliability were tested using Smart-PLS 4.0. In measuring, the data is said to be valid if the outer loadings are > 0.5 and the data is reliable if it is > 0.7 (Hair Jr, 2021).

Table 1. Measurement Model Parameters

	Item Questioner	Outer Loadings	Cronbach's Alpha	Composite Reliability	Average Variance
Group Collaboration	Gc1	0.940	0.837	0.855	0.859
	Gc2	0.913			
Sync & Async	S&A1	0.932	0.855	0.856	0.873
	S&A2	0.938			
English	E 1	0.837	0.882	0.887	0.678
	E2	0.807			
	E3	0.813			
	E4	0.819			
	E5	0.841			
Creativity	C1	0.758	0.918	0.923	0.678
	C2	0.820			
	C3	0.787			
	C4	0.745			
	C5	0.882			
	C6	0.881			
	C7	0.885			
PjBL	PjBL1	0.974	0.943	0.946	0.946
	PjBL2	0.971			

Table 1 shows reliable data with Cornbach's alpha indicator and composite reliability> 0.7. Validity with outer loading indicator > 0.5. Then the validity and reliability of the data have been guaranteed.

Project-based learning (PjBL), a technique for learning that combines in-person instruction and online strategies, is one of the teaching strategies that was integrated synchronously and asynchronously. The educator activities in synchronous and asynchronous integrated project-based learning include; (a) Problem Introduction, educators asking questions about real problems. Educators give one problem in the form of a case/picture/video in everyday life so that it raises questions. Then, all documented questions students ask due to syntax 1;(b) Designing a Project Plan, the educator divides the group and explains the tasks and roles of each group member. Each group is guided in discussing and designing a project plan; (c) Preparing the Project Schedule, teachers and students agree on a project creation schedule ; (d) Project Implementation and Monitoring, teachers monitor students through WhatsApp Groups, Facebook, Virtual

Classrooms, Rubrics, Google Classrooms, et ; (e) Presentation; the teacher emphasizes the presentation results in each group; (f) In evaluation and Reflection, teachers measure understanding (indicators of achievement). Evaluation involves examining activities, attitudes, project results, and understanding (quizzes). Strengthening the concept of teachers by reviewing each group's results, summaries, or conclusions. At the end of the PjBL implementation, students gave feedback on implementing project-based learning in English courses. Thus, with some open comments, questions are Likert-type items that yield quantitative results. Open comments are analyzed qualitatively while Likert-type survey questions yield quantitative results (Ene & Upton, 2018). Students were given a Likert scale with four options: strongly agree, agree, disagree, and strongly disagree.

FINDINGS AND DISCUSSION

Finding

The results of this study include the first application of project-based learning in synchronous and asynchronous integrated English courses, as well as the opinions of students who have taken such courses. The following is the implementation of student activities in synchronous and asynchronous integrated PjBL in English language learning:

Table 2. PjBL Student Activities Integrated Synchronous and Asynchronous

No	Learning Activities	Synchronous	Asynchronous	Media
1.	Providing questions	V		Face to face
2.	Designing a project plan		V	WhatsApp group, Website, Zoom
3.	Develop a project schedule		V	WhatsApp group, Website, Zoom
4.	Implementing and monitoring the project through WhatsApp		V	Whatsapp group, Website
5.	Class presentation/discussion	V		Face to face
6.	Evaluation	V		Face to face

Giving questions; in this activity, a question is given to the students. Questions concerning news items. They look for specific music-related topics, sports, art exhibitions, vacations, transportation, and recreation. Students find topics through

websites, videos, YouTube books, magazines, and other sources. In this activity, students are enthusiastic about asking questions. Students form groups and schedules around this topic. The question is, "How do you understand the use of language in news items, especially regarding language features?" in this learning activity using synchronously.

Designing a project plan; the students find topics related to the project. After they are divided into groups, the students design a project and search for news related to sports, music, art exhibitions, vacations, transportation, and recreation. Then, each group works together to find material through WhatsApp groups, websites, and Zoom, which will be presented in class, and this activity was carried out synchronously.

Develop a project schedule; students make schedules in their groups to determine projects. The schedule is created in each group based on the tasks they create and will be presented in class. The process is carried out at this stage through WhatsApp groups, websites, and Zoom. This activity is carried out synchronously.

Conducting projects and monitoring; in this activity, students work together in groups to discuss topics related to predetermined news. The discussion is about each assignment that has been divided, then finish the tasks so they are prepared to be presented to the class. Educators monitor and control student projects through WhatsApp groups and websites. This activity is carried out synchronously.

Presentations; in this activity, students present their projects in class, and educators reinforce students. Within a week, one group of students presents one topic. After the students present the Youtube video, a report or information from listening and watching to the video will be presented. Studies found by Blacer-Bacolod, (2022) that student-generated videos and project-based learning activities provide students with accurate and meaningful opportunities to learn independently and collaboratively. Then, find the language features related to the topic. In the speech section, students find examples of parts of this type of speech. Students present headlines on the topics they find that explain the topic in the form of: Who, What, Where, When, and Why. This activity is carried out asynchronously.

In evaluation; the teacher provides feedback related to the project presented by students. Studies from Abuhmaid, (2020) show that due to its potential to improve education by giving students more responsibility for their learning and an active role,

project-based learning is growing in popularity. Project-based learning also enables students to give meaning to their learning because they are required to present a "product" that exemplifies their learning and efforts. This activity is carried out asynchronously.

Student Opinions on Synchronous and Asynchronous Integrated PjBL

The second purpose of this study is to describe students' opinions on implementing project-based learning in English courses. The questionnaire method is a crucial research tool to measure the attitude and opinions of respondents when responding to specific questions(Pinto & Reshma, 2021). Questionnaires were developed to collect data from participants to answer research questions (Abuhmaid, 2020). The authors' data was based on the objectives of both studies through Google Forms.

Table 3. Students' Opinion on the Implementation of Synchronous and Asynchronous Integrated PjBL in English (N=65)

No	Question	SA (%)	A (%)	SD (%)	D (%)
1.	Students appreciate synchronous learning	26.2	60	13.8	0
2.	Students appreciate asynchronous learning	27.7	66.2	6.2	0
3.	Project-based learning makes students motivated in learning English	35.4	60	4.6	0
4.	PjBL integrated synchronously and asynchronously trains students to learn independently and in groups	29.2	67.7	3.1	0
5.	Project-based learning makes students more interested in learning English	36.9	56.9	6.2	0
6.	The project given awakens students' creativity	36.9	60	3.1	0
7.	Students are motivated to look for support sources to get new ideas for developing projects	35.4	61.5	1.5	1.5
8.	The students enjoy collaboration and cooperation in project completion	38.5	58.5	3.1	0
9.	Project-based learning makes students more active in discussions	33.8	60	4.6	1.5
10.	The project given makes students more active in looking for sources via the internet	35.4	61,5	3.1	0
11.	In PjBL, students dare to express their opinion to lecturers and friends in class about the material being discussed	29.2	69.2	1.5	0
12.	Project-based learning increases students' vocabulary	32.3	67.7	0	0
13.	PjBL improves students ' English learning outcomes	32.3	64.6	3.1	0

14.	Students are motivated to learn English using the PjBL method, which is integrated synchronous and asynchronous	30.8	64.6	4.63	0
15.	Based on the student's opinion, the project-based learning model is appropriate for English courses	33.8	61.5	4.6	0
16.	Learning English with project-based learning that is integrated with technology makes students understand the material more	28.1	67.2	4.7	0
17.	Collaboration and cooperation of students in project-based learning	30.8	67.7	1.5	0
18.	Project-based learning makes students more active in discussing with their friends	29.2	67.7	3.1	0
19.	The English proficiency of students who participate in synchronous and asynchronous project-based learning increases	29.2	67.7	3.1	0
20.	Project-based learning makes students understand what were the steps they should take to solve the problem	35.4	64.6	0	0

Table 3 showed survey results, including responses from students about synchronous and asynchronous integrated PjBL implementation in English courses. Sixty-five students came from the class of the Islamic Education Study Program, both male and female. The percentage may not reach 100% due to rounding. The abbreviation of the table shows that SA=Strongly Agree, A=Agree, SD=Strongly Disagree, and D=Disagree. From 20 questionnaires given to students, it was found that the percentage of student opinions on implementing project-based learning in synchronous and asynchronous integrated English courses was found. It shows that 65% of students agree that project-based learning in English is synchronously and asynchronously integrated.

At the end of the question, students were given one question "What do you think about learning English with the PjBL (Project Based Learning) method integrated with synchronous (google meet, zoom) and asynchronous (WhatsApp group, internet browsing, google classroom)? The response confirmed that 24 students found synchronous and asynchronous integrated PjBL very good, facilitating and assisting in learning. It is helpful to increase creativity in education and fun and add deep knowledge. According to students, learning English with the integrated PjBL Synchronous and asynchronous method was very efficient and easy and could be used

in today's advanced technology. Create more active discussions with friends. The 32 students thought that learning became better, quite good, and intriguing because it could train students to think more critically and actively in learning English, make it easier to understand the material and make them more active while studying.

Discussion

Synchronous is used because it is not always possible for students to interact face-to-face and because no one can predict the circumstances that will exist in the upcoming days. We can learn about what is being shared immediately by implementing async. This implementation is simple to use, clear to understand, and extremely beneficial for comprehending and learning English. The lessons provided were fun and exciting. Learning PjBL can get new things and get much knowledge that was very helpful. Then nine students said the Zoom application needs to add insight because students were not robots that make a difference like YT. So that it can directly teach people instead of mobile phones or laptops; Learning with this method was unsuitable for students to understand the material because it can interfere with student learning, such as signal problems and others. Need help understanding the material explained online, so to learn more, do not understand the learning material well. Other students argue that they prefer face-to-face learning and not online.

The students claimed that synchronous and asynchronous integrated PjBL was less supportive of learning because it reduced student understanding, made it difficult to remember the information, and left students with questions about the information presented exclusively via Zoom. The PjBL method gives less knowledge about the learning material. From all the responses given to students, the average student responds positively to PjBL learning which was integrated synchronously and asynchronously.

According to students, synchronous classes offered fewer benefits than asynchronous ones((Bin Dahmash, 2021).The ability for students to communicate in real-time and receive prompt responses was the main benefit of synchronous classes. Teachers should promote student participation in blended learning (BL), online, and synchronous courses that combine synchronous and asynchronous activities, claim (Heilporn et al., 2021).The findings especially emphasize the importance of well-structured and fast-paced courses, fully exploiting and integrating synchronous and asynchronous blended learning modes. Blended learning effectively creates more

learning opportunities and supports students' flexible learning, but its application varies between contexts (Xiuhan Li , Yuqin Yang , Samuel Kai Wah Chu & Zhang, 2020) Synchronous and asynchronous activities are combined in blended learning environments (BLs), which are intermediate between in-person and online teaching and learning are exciting because the literature shows that they can optimize student engagement (Graham, 2019); (Heilporn et al., 2021).

According to Lakhal et al., (2020) many features promote academic and social integration, including the pedagogical strategies used. In addition, this integration depends on the attitude of instructors and face-to-face students toward online students. The ability to combine multiple physical classrooms, synchronous cyber classrooms, and asynchronous cyber classrooms has changed as a result of advancements in internet technology. With the help of various synchronous tools like video conferencing, electronic whiteboards, and interactive response systems, rural and urban schools can be completely integrated. Blended learning is the process of combining two or more physical classrooms to support online real-time communication between teachers and students in various locations (Yang, 2019).

In terms of synchronous study, online synchronous learning environments were improving (Grammens et al., 2022). (Mpungose, 2020)found Zoom Video Conferencing Technology (VCT) as a valuable platform for improving effective and synchronous e-learning. In online learning environments, the introduction of newer web-synchronous conferencing has allowed for high student-to-student and student-instructor engagement. However, it remains to be seen whether or not the presence of synchronous or in-person interaction will have the same impact on the learning process and learning outcomes for all students with different characteristics or whether other factors can compensate for the lack of in-person interaction(Moallem, 2015). A study Yang, (2019) a blended synchronous classroom strategy to boost student performance in rural areas demonstrates how the efficacy of blended synchronous classrooms was investigated through comparative analysis, questionnaire surveys, and video analysis in the classroom. The following are the findings of this research:

1. After two years of practice, student achievement in rural schools significantly increased;

2. There were no significant differences in students' perceptions of the efficacy of mixed synchronous classrooms between local and remote classrooms;
3. Teachers giving both local and remote classrooms equal attention is crucial for successfully implementing blended synchronous classes.

The study by Lapitan et al., (2021) showed that the primary motivation for choosing a blended strategy was to increase student participation in their learning process rather than sitting still during synchronous discussions.Asynchronous studies learn to play or play. Some students think asynchronous methods were boring (Karaaslan et al., 2018).Bailey et al.,(2021)found that students motivated by asynchronous online collaborative writing were likelier to enjoy online learning than students who spoke online via synchronous video. The study from Muzaini et al., (2021) stated that both synchronous and asynchronous teaching techniques can encourage students' creative growth and, at the same time, are supported by teachers' pedagogical attitudes in teaching and learning trust in information, communication, and technology (ICT). Based on studies on synchronous and asynchronous, it was found that the combination of asynchronous and synchronous modes was considered optimal to support online student learning (Moorhouse & Wong, 2022).

PjBL and ICT instruction would result in a good transformation (for example, technology-enabled learning offers better outcomes than traditional learning) (Marwan, 2015) .Abuhmaid, (2020)studies showed that online and classroom students show a fervently favorable outlook on project-based learning. However, as new digital technologies proliferated and traditional teaching methods were disrupted, more people were turning to online learning, and project-based learning (PjBL) was widely recognized as an effective pedagogy for motivating and engaging students(Zhong & Lyu, 2022). Alexander, (2017)argued that Intensifying the learning process and hastening the formation of professional competencies; increasing student responsibility for learning outcomes and project activation were some of the most frequently mentioned benefits of project-based learning. These benefits included increased motivation for study and individual work; stimulation of an interdisciplinary approach; in-depth understanding of the importance of theoretical academic problems for the solution of relevant professional tasks; and teaching students multidisciplinary

knowledge, problem-solving techniques, ways of thinking, and collaborative practice, project-based learning (PBL) has been identified as a practical approach for instructors.

Wr & Okraszewska, 2020)argued that one of the most successful techniques for teaching "soft" skills and acquiring knowledge was project-based learning (PjBL). Pinto & Reshma, (2021)define that PjBL would expose students to many opportunities to learn how to think critically and analyze ideas. The PjBL approach can be applied to all subjects (Condliffe et al., 2017).According to Aydin & Yuzer, (2006) project review, virtual classrooms allowed for more tangible engagement and encourage students to develop greater autonomy. However, when groups of students who prefer conventional classes were considered blended strategies that combine traditional face-to-face teaching with instruction, virtual was recommended as the most effective method for EFL learners.

CONCLUSION

Project-based learning, a teaching strategy that combines in-person instruction with online learning methods, is one of the learning strategies. Applications and student opinions about PjBL integrating synchronous and asynchronous in English learning found that implementing project-based learning includes: asking questions, designing projects, preparing schedules, conducting projects and monitoring, and presentations. This activity is carried out by students who learn synchronous and asynchronous integrated English. Some media used in learning are WhatsApp groups, videos, YouTube, websites, and face-to-face. In implementing synchronous and asynchronous integrated PjBL in English courses, the evaluation is understanding the news about the topics discussed and then presenting in groups in front of the class. In addition, students are given questionnaires related to implementing synchronous and asynchronous integrated PjBL. Eighteen questionnaire responses by students agreed upon English language learning with synchronous and asynchronous integrated PjBL methods. In other words, the PjBL method in English learning will be more meaningful in increasing student creativity and collaboration using integrated technology.

REFERENCES

Abuhmaid, A. M. (2020). The efficiency of online learning environment for implementing project-based learning: Students' perceptions. *International Journal of Higher Education*, *9*(5), 76–83. https://doi.org/10.5430/ijhe.v9n5p76

Alexander, K. (2017). A problem shared: Technology transfer and development in European integrated multi-trophic aquaculture (IMTA). *Aquaculture*, *473*, 13–19. https://doi.org/10.1016/j.aquaculture.2017.01.029

Ali, W. (2020). Online and Remote Learning in Higher Education Institutes: A Necessity in light of COVID-19 Pandemic. *Higher Education Studies*, *10*(3), 16. https://doi.org/10.5539/hes.v10n3p16

Aydin, B., & Yuzer, T. V. (2006). Building a Synchronous Virtual Classroom in a Distance English Language Teacher Training (DELTT) Program in Turkey. In *Turkish Online Journal of Distance Education*.

Bailey, D., Almusharraf, N., & Hatcher, R. (2021). Finding satisfaction: Intrinsic motivation for synchronous and asynchronous communication in the online language learning context. In *Education and Information …*. Springer. https://doi.org/10.1007/s10639-020-10369-z

Baser, D., Ozden, M. Y., & Karaarslan, H. (2017). Collaborative project-based learning: An integrative science and technological education project. *Research in Science & …*. https://doi.org/10.1080/02635143.2016.1274723

Bin Dahmash, N. (2021). Synchronous and Asynchronous English Writing Classes in the EFL Context: Students' Practices and Benefits. *Arab World English Journal*, *12*(2), 93–108. https://doi.org/10.24093/awej/vol12no2.7

Blacer-Bacolod, D. (2022). Student-Generated Videos Using Green Screen Technology in a Biology Class. *International Journal of Information and Education Technology*, *12*(4), 339–345. https://doi.org/10.18178/ijiet.2022.12.4.1624

Bonk, C. J. (2020). Pandemic ponderings, 30 years to today: Synchronous signals, saviors, or survivors? *Distance Education*. https://doi.org/10.1080/01587919.2020.1821610

Condliffe, B., Quint, J., Visher, M. G., Bangser, M. R., Drohojowska, S., Saco, L., & Nelson, E. (2017). Project-based Learning: a Literature Review. *Mdrc : Building Knowledge to Improve Social Policy*, *P-12 Education*, 2. https://www.mdrc.org/publication/project-based-learning

Ekİzer, F. N. (2021). Proje TabanlFaaliyetlerin EÖğrencilerinin KonuşmBecerilerinEtkisi. *Milli Egitim*, *50*(230), 1059–1073. https://doi.org/10.37669/milliegitim.700145

García, C. (2016). Project-based learning in virtual groups-collaboration and learning outcomes in a virtual training course for teachers. *Procedia-Social and Behavioral Sciences*. https://www.sciencedirect.com/science/article/pii/S1877042816309417

Graham, A. (2019). Benefits of online teaching for face-to-face teaching at historically black colleges and universities. *Online Learning*. https://eric.ed.gov/?id=EJ1211047

Grammens, M., Voet, M., Vanderlinde, R., & ... (2022). A systematic review of teacher roles and competences for teaching synchronously online through videoconferencing technology. *Educational Research …*. https://www.sciencedirect.com/science/article/pii/S1747938X22000306

Hair Jr, J. H. G. R. C. S. M. , D. N. & R. S. (2021). *Pemodelan ural kuadrat terkecil parsial (PLS-SEM) menggunakan R: Buku kerja*. Springer.

Heilporn, G., Lakhal, S., & Bélisle, M. (2021). An examination of teachers' strategies to foster student engagement in blended learning in higher education. In *… Technology in Higher Education*. Springer. https://doi.org/10.1186/s41239-021-00260-3

Jr, L. D. S. L., Tiangco, C. E., Sumalinog, D. A. G., & ... (2021). An effective blended online teaching and learning strategy during the COVID-19 pandemic. *Education for Chemical …*. https://www.sciencedirect.com/science/article/pii/S1749772821000129

Karaaslan, H., Kilic, N., Guven-Yalcin, G., & ... (2018). Students' reflections on vocabulary learning through synchronous and asynchronous games and activities. In *… of Distance Education*. dergipark.org.tr. https://dergipark.org.tr/en/pub/tojde/article/444640

Khalil, R., Mansour, A. E., Fadda, W. A., Almisnid, K., & ... (2020). The sudden transition to synchronized online learning during the COVID-19 pandemic in Saudi Arabia: a qualitative study exploring medical students' …. In *… medical education*. Springer. https://doi.org/10.1186/s12909-020-02208-z

Khoza, S. B., & Biyela, A. T. (2020). Decolonising technological pedagogical content knowledge of first year mathematics students. *Education and Information Technologies*, *25*(4), 2665–2679. https://doi.org/10.1007/s10639-019-10084-4

Lakhal, S., Mukamurera, J., Bédard, M. E., & ... (2020). Features fostering academic and social integration in blended synchronous courses in graduate programs. In *… in Higher Education*. Springer. https://doi.org/10.1186/s41239-020-0180-z

Lapitan, L. D., Tiangco, C. E., Sumalinog, D. A. G., Sabarillo, N. S., & Diaz, J. M. (2021). An effective blended online teaching and learning strategy during the COVID-19 pandemic. *Education for Chemical Engineers*, *35*, 116–131. https://doi.org/10.1016/j.ece.2021.01.012

Lou, Y., & Kim MacGregor, S. (2004). Enhancing project-based learning through online between-group collaboration. *Educational Research and Evaluation*, *10*(4–6), 419–440. https://doi.org/10.1080/13803610512331383509

Mahasneh, A. M., & Alwan, A. F. (2018). The effect of project-based learning on student teacher self-efficacy and achievement. *International Journal of Instruction*, *11*(3), 511–524. https://doi.org/10.12973/iji.2018.11335a

Marwan, A. (2015). Empowering English through project-based learning with ICT. *Turkish Online Journal of Educational Technology*, *14*(4), 28–37.

Moallem, M. (2015). *The Impact Of Synchronous And Asynchronous Communication Tools On Learner Self-Regulation, Social Presence, Immediacy, Intimacy And Satisfaction In Collaborative Online Learning* (Vol. 3). http://2u.com/semester-online/;

Moorhouse, B. L., & Wong, K. M. (2022). Blending asynchronous and synchronous digital technologies and instructional approaches to facilitate remote learning. *Journal of Computers in Education*, *9*(1), 51–70. https://doi.org/10.1007/s40692-021-00195-8

Mpungose, C. B. (2020). Emergent transition from face-to-face to online learning in a South African University in the context of the Coronavirus pandemic. In *Humanities and Social Sciences Communications*. nature.com. https://www.nature.com/articles/s41599-020-00603-x

Mpungose, C. B. (2021). Lecturers' reflections on use of Zoom video conferencing technology for e-learning at a South African university in the context of coronavirus. *African Identities*. https://doi.org/10.1080/14725843.2021.1902268

Muzaini, M., Rahayuningsih, S., Nasrun, N., & Hasbi, M. (2021). Creativity in Synchronous and Asynchronous Learning During the Covid-19 Pandemic: a Case Study. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, *10*(3), 1722. https://doi.org/10.24127/ajpm.v10i3.3897

Phelps, A., & Vlachopoulos, D. (2020). Successful transition to synchronous learning environments in distance education: A research on entry-level synchronous facilitator competencies. *Education and Information Technologies*, *25*(3), 1511–1527. https://doi.org/10.1007/s10639-019-09989-x

Pinto, A. P., & Reshma, K. J. (2021). Impact of project-based learning on entrepreneurial and social skills development. *Journal of Engineering Education Transformations*, *34*(Special Issue), 593–598. https://doi.org/10.16920/jeet/2021/v34i0/157227

Quezada, R. L., Talbot, C., & Quezada-Parker, K. B. (2020). From Bricks and Mortar to Remote Teaching: A Teacher Education Program's Response to COVID-19.

Journal of Education for Teaching, *46*(4), 472–483. https://doi.org/10.1080/02607476.2020.1801330

Rahmawati, A., Suryani, N., Akhyar, M., & Sukarmin. (2020). Technology-Integrated Project-Based Learning for Pre-Service Teacher Education: A Systematic Literature Review. *Open Engineering*, *10*(1), 620–629. https://doi.org/10.1515/eng-2020-0069

Splichal, J. M., Oshima, J., & Oshima, R. (2018). Regulation of collaboration in project-based learning mediated by CSCL scripting reflection. *Computers and Education*, *125*, 132–145. https://doi.org/10.1016/j.compedu.2018.06.003

Trishchenko, D. A. (2018). Experience of project-based learning: An attempt at objective analysis of results and problems. *Obrazovanie i Nauka*, *20*(4), 132–152. https://doi.org/10.17853/1994-5639-2018-4-132-152

Tuong DINH, C. (2023). Impact of Synchronous Online Learning Environment on Students' Cognitive Engagement and Learning Outcomes. *Turkish Online Journal of Distance Education-TOJDE*, *24*(3), 22–38.

Viro, E., & Joutsenlahti, J. (2018). The starT project competition from the perspective of mathematics and academic literacy. *Education Sciences*, *8*(2). https://doi.org/10.3390/educsci8020067

Wr, D., & Okraszewska, R. (2020). *Project-Based Learning as a Method for Interdisciplinary Adaptation to Climate Change — Reda Valley Case Study*.

Xiuhan Li , Yuqin Yang , Samuel Kai Wah Chu, Z. Z. & Y., & Zhang. (2020). Applying blended synchronous teaching and learning for flexible learning in higher education: an action research study at a university in Hong Kong. *Asia Pacific Journal of Education*. https://doi.org/https://doi.org/10.1080/02188791.2020.1766417

Yang, J. (2019). Using blended synchronous classroom approach to promote learning performance in rural area. *Computers and Education*, *141*. https://doi.org/10.1016/j.compedu.2019.103619

Yuzer, T. V. (2007). Generating Virtual Eye Contacts Through Online Synchronous Communications in Virtual Classroom Applications. In *Turkish Online Journal of Distance Education* (Issue 8).

Zakiah, N. E., & Fajriadi, D. (2020). Hybrid-PjBL: Creative thinking skills and self-regulated learning of pre-service teachers. *Journal of Physics: Conference Series*, *1521*(3). https://doi.org/10.1088/1742-6596/1521/3/032072

Zhang, Y. (2019). College English teaching status and individualized teaching design in the context of mobile learning. *International Journal of Emerging Technologies in Learning*, *14*(12), 85–96. https://doi.org/10.3991/ijet.v14i12.10704

Zhao, Y., & Watterston, J. (2021). The changes we need: Education post COVID-19. In *Journal of Educational Change*. Springer. https://doi.org/10.1007/s10833-021-09417-3

Zhong, C., & Lyu, K. (2022). Scaffolding Junior Middle School Students' Engagement in Online Project-based Learning During the COVID-19 Pandemic: A Case Study from East China. *SAGE Open*, *12*(4), 1–14. https://doi.org/10.1177/21582440221131815