



An Online English Learning Model Integrating the Flipped Classroom, Interactive Response Systems, and Task-Based Language Teaching: Design-Based Research

Kiki Juli Anggoro

Naresuan University

Supanee Sengsri

Naresuan University

Kobsook Kongmanus

Naresuan University

Sudakarn Patamadilok

Naresuan University

Introduction

Design-based research (DBR) is a methodological technique in which products are created with specific objectives in mind (Kelly, 2014). The goal of this strategy is to achieve quantitative changes in student learning in classrooms centered on a specific learning difficulty (Anderson & Shattuck, 2012; McKenney & Reeves, 2013). The iterative nature of DBR treatments is a distinguishing feature (Armstrong et al., 2020). While trying out the developed intervention, the researchers simultaneously find ways to enhance by making use of research approaches that are best suited to the setting; thus, the result takes precedence above the process (Armstrong et al., 2020).

In Thai universities, improving students' English proficiency level has been a major concern. Several studies found that Thai university students' average English proficiency level was only A1 and A2 (Teng & Sinwongsawat, 2015; Waluyo, 2019). Tantiwich and Sinwongsawat (2021) also reported Thai students' difficulties with English communication skills. With the pandemic and the sudden transition to online teaching, the problem has worsened. Online EFL instruction in the country is more teacher-centered, thus resulting in students' lack of participation and engagement (Anggoro & Khasanah, 2021). Since participation and engagement strongly relate to students' learning achievement (Archambault, et al., 2013), this issue has become urgent. This study aimed to develop a model that might solve the problem. In this design-based research (DBR), the flipped classroom, interactive response systems (IRSs) and Task-based language teaching were integrated.



Literature Review

Flipped Classroom (FC)

Flipped Classrooms have been used in several studies in English language teaching and they have been reported to have positive effects on students' learning (Fatemeh et al., 2020; Chen & Hwang, 2020; Hosseini et al., 2020). The pre and in-class activities enable students to learn at their own pace flexibly (Anggoro & Khasanah, 2021). The model can improve student-teacher interaction (Teng, 2017), increase students' motivation in learning (Basal, 2015), encourage collaborative learning (Ekmekci, 2017), and engage students (El-Sawy, 2018). In an English class, the flipped classroom can help students improve their pronunciation, vocabulary learning, class preparation, reading at home, and reading comprehension (El-Sawy, 2018), improve their listening comprehension (Ahmad, 2016), improve their writing skills (Ekmekci, 2017), and support self-assessment, peer-assessment, and communication (El-Sawy, 2018).

Considering the current online EFL instruction problem due to COVID-19, the flipped classroom concept was added into DBR. Nevertheless, as the flipped classroom usually requires a blend of face-to-face and online settings, the model could not be directly applied. Hence, this study adapted the FC model for use in a fully virtual setting

Interactive Response Systems (IRSs)

Self-regulation is a crucial component of FC, and it is closely linked to students' classroom performance (Sletten, 2017). However, students' procrastination has been a major problem in FC. Students are lazy to access the pre-class materials. This study included a method to tackle this issue. IRSs or Student Response System, for example, employ clickers or other interactive programs to provide quick and real-time evaluation, allowing teachers to ask students questions, collect their replies, and display the whole class's responses (Trees & Jackson, 2007). According to Anggoro and Khasanah (2021), the IRSs are good lesson reviewers. Though it comes in the form of a quiz, its interactive features get students engaged and more motivated (Chaiyo & Nokham, 2017; Lee et al., 2019). In the current situation where classes are mostly online, the combination of FC and IRS might become the answer to several issues concerning achievement, participation, and engagement.

IRS or interactive response systems can be a solution to bring flipped classrooms to a fully virtual environment. IRS has become a popular tool in recent years. Kahoot, Quizizz, and Socrative are well-known examples of IRS. They have been utilized in classrooms and studied in EFL classrooms to investigate their effectiveness. Liu et al. (2003) defined Interactive Response System (IRS) as a technology-enabled learning environment that promotes engagement in learning. An IRS allows teachers to assess student comprehension and track their progress by delivering educational assignments (Awedh et al., 2014). Also, IRS allows teachers to make learning more enjoyable, boost student involvement in the classroom, inspire deeper conversation, foster collaboration, and provide quick feedback (Turner, 2015). IRS has the potential to improve the flipped classroom as it can be utilized as an asynchronous or synchronous platform to deliver practice or assessment to students.

Task-Based Language Teaching (TBLT)

In addition to the technology, an approach specific to English language teaching, TBLT, was integrated as activities in the model. Richards (2006) stated that TBLT focuses on communicative and engaging activities as a central element of language instruction. The focus of learning in TBLT is divided into three sequences: pre-work, task cycle, and language focus (Willis, 1996). Each sequence provides different information to the students to help them learn (Willis, 1996). In their study, Putri and Nugraha (2022) found that TBLT benefited students' English learning, especially in relation to vocabulary. Córdoba Zúñiga (2016) reported that TBLT enhanced students' communicative competence and interaction. At present, combining

TBLT and technology tools have become more common. The main reason is its benefits for learning. González-Lloret and Ortega (2014) argued that technology-mediated TBLT can foster students' learning motivation and active engagement. Oskoz and Elola (2014) reported positive effects of technology-mediated TBLT on students' learning achievement and engagement.

Method

Research Design

Design-Based Research (DBR) is utilized as the research method. A DBR cycle includes 4 phases: reflect, design, test, and evaluate (Sandoval, 2014). In this study, the first phase, reflect, aimed to investigate the current theories and practices of online EFL instruction. It included gathering literature related to the topics. The next phase, Design, is where the prototype was created by adapting the flipped classroom, interactive response system, and task-based language teaching approach. The researchers utilized the findings from the literature study in the reflection phase. The test aimed to examine the effects of the developed model on students. The last phase, evaluate, is where the gathered data were analyzed. This paper reported only two phases in the first cycle of the research, test and evaluate. The objectives of the research were as follows.

1. To examine the effects of the model on students' English learning achievement in an online environment.
2. To investigate students' perceptions of the model.

Participants and Data Collection

The experiment was administered at Walailak University, Thailand, for one semester in 2022. The participants comprised two groups of students that were randomly assigned to experimental/treatment and control group. The participants were determined through stratified random sampling. Stratified random sampling is where data are split into different subgroups (strata) that share features; then, a random sample from each stratum is taken (Acharya et al., 2013). In this study, the strata were students' English proficiency levels or their Common European Framework of Reference for Languages (CEFR) levels. Students' CEFR levels were identified from an English proficiency test certificate they submitted before the semester. Both the experimental and control groups were enrolled in a course titled "English for Academic Communication".

Students in the experimental groups were informed about the DBR and given a choice to stay or to move to the control group. They were taught using the model illustrated in Figure 1. The three phases in the model were adapted from FC. The activities were designed following TBLT. The tools used in the activities included IRSs. In contrast, the teacher of the control group only used an LMS and a teleconferencing tool. To gather the data for the first research objective, a pretest and posttest were conducted for both groups. The tests included writing and speaking tests. For the second research objective, students in the experimental group were given an online survey consisting of closed and open-ended sections.

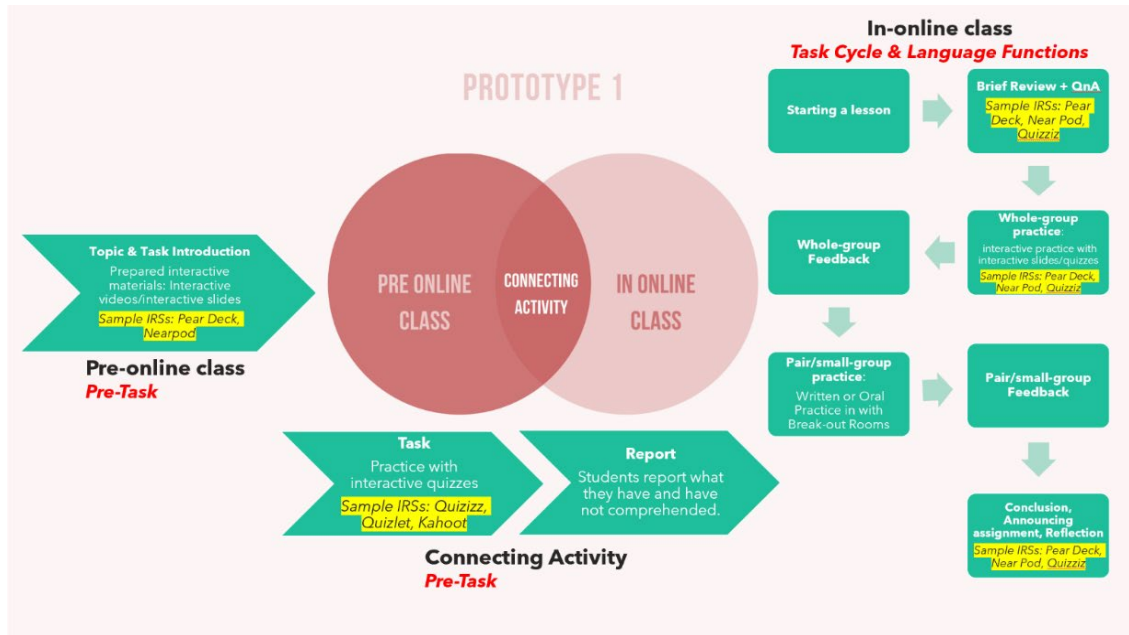


Figure 1. Prototype 1 used in cycle 1.

Data Analysis

To address the first research objective, a paired t-test was used to compare the pretest and posttest scores of both the experimental and control group. Moreover, an independent t-test examined the difference in improvement between the experimental and control group. In relation to the second objective, students' responses in the closed-ended section were analyzed by using descriptive statistics. The comments in the open-ended section were investigated by using content analysis.

Results and Discussion

Research Objective 1

As previously mentioned, the pretest and posttest included writing and speaking tests. This section reports the results of the writing and speaking tests separately to gather in-depth understanding of the model's effects.

Tables 1 and 2 show the comparison between students' writing pretest and posttest scores. The tables indicate that both groups experienced improvement. Table 2 shows that the posttest scores are significantly higher than those of the pretest both in the control group, $t(34) = -6.83, p = .00$, and in the experimental group, $t(35) = -26.84, p = .00$.

TABLE 1
Paired Samples Statistics - Writing

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	wpretest	4.8333	36	1.19523	.19920
	wposttest	7.0694	36	.91926	.15321
Pair 2	wpretest	4.8571	35	1.30368	.22036
	wposttest	5.9000	35	1.43895	.24323

TABLE 2
Paired Samples Test - Writing

		Paired Differences			95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	wpretest -	-							
	wposttest	2.23611	.49980	.08330	-2.40522	-2.06700	-26.844	35	.000
Pair 2	wcpretest -	-							
	wcposttest	1.04286	.90238	.15253	-1.35283	-.73288	-6.837	34	.000

Even though both groups had better posttest results, the experimental group did score a higher average score (M=7.06, SD=.91) than the control group (M=5.9, SD=1.43), as shown in Table 1. In addition, Table 3 indicates that the difference between the posttest scores of the two groups is significant, $t(69) = 4.09$, $p = .00$. From this result, the treatment given to the experimental group worked better in improving the writing score.

TABLE 3
Independent Samples Test – Writing

		Levene's Test for Equality of Variances		t-Ttest for Equality of Means				95% Confidence Interval of the Difference		
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
wriposttest	Equal variances assumed	13.815	.000	4.093	69	.000	1.16944	.28574	.59941	1.73948
	Equal variances not assumed			4.068	57.535	.000	1.16944	.28746	.59393	1.74496

Tables 4 and 5 compare students' speaking pretest and posttest results. Table 5 indicates that there was a significant improvement in the performance of both the experimental group, $t(35) = -32.86$, $p = .00$, and the control group, $t(34) = -26.42$, $p = .00$.

TABLE 4
Paired Samples Statistics - Speaking

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	spretest	4.1806	36	.82074	.13679
	sptest	6.3889	36	.59894	.09982
Pair 2	scpretest	4.1429	35	.79123	.13374
	scptest	6.0571	35	.89748	.15170

TABLE 5
Paired Samples Test - Speaking

		Paired Differences			95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	spretest -	-							
	sptest	2.20833	.40311	.06719	-2.34473	-2.07194	-32.869	35	.000
Pair 2	scpretest -	-							
	scptest	1.91429	.42850	.07243	-2.06148	-1.76709	-26.429	34	.000

Table 6 indicates that even though the experimental group (M=6.38, SD=.59) scored higher than the control group (M=6.05, SD=.89), the difference is not significant, $t(69) = 1.83$, $p = .27$. From this result, the treatment given to the experimental group did not work better than that to the control group in improving the speaking score.

TABLE 6
Independent Samples Test - Speaking

		Levene's Test for Equality of Variances		t-Test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
speakingposttest	Equal variances assumed	1.232	.271	1.837	69	.071	.33175	.18061	-.02855	.69204
	Equal variances not assumed			1.827	59	.073	.33175	.18160	-.03162	.69512

Research Objective 2

This section reports on the experimental group’s perception of the treatment. The following table sums up the overall collected data in the closed-ended section of the survey.

TABLE 7
Students' Perceptions in Cycle 1

No	Items	Means	SD
<i>Items 1-10 (Pre-class & Connecting Activities)</i>			
1	I feel engaged when I do the interactive activities such as Nearpod, Pear Deck, and Kahoot.	4.25	0.44
2	Doing the interactive activity before online class is fun.	4.31	0.47
3	The interactive activities enable me to be more involved in the learning process.	4.34	0.48
4	It is convenient to access the interactive activities before online class.	4.25	0.44
5	I have no issue navigating the interactive activities before online class.	4.28	0.46
6	The platforms for the interactive activities are user-friendly so it did not take a long time for me to learn how to access them.	4.31	0.47
7	Studying the interactive materials before online class makes me understand the lesson more.	4.28	0.46
8	The independent interactive activities make me more prepared for the online class.	4.25	0.44
9	The interactive activities help me learn the lesson matter before online class.	4.31	0.47
10	Overall, I am happy with the interactive activities before class.	4.28	0.46
<i>Items 11-20 (Activities during online class)</i>			
11	The activities during online class are fun and engaging.	4.28	0.46
12	The online class enables me to participate by asking and answering questions, having discussions with the teacher and friends, and practicing writing and speaking English.	4.31	0.47
13	I am active and involved in activities during online classes.	4.28	0.46
14	It is convenient to join the activities during online classes.	4.28	0.46
15	I have no issue accessing interactive platforms such as Pear Deck, Kahoot, and Socrative during an online class.	4.28	0.46
16	The interactive platforms are user-friendly so it did not take a long time for me to learn how to access them.	4.34	0.48
17	Activities during online class made me understand the lesson more.	4.22	0.42
18	Activities during online class helped develop my English skills.	4.25	0.44
19	Activities during the online class enabled me to practice writing and speaking skills.	4.31	0.47
20	Overall, I am happy with the activities during the online class.	4.38	0.49

From Table 7, students' overall satisfaction on the model is high since the score for each item is over 4 out of 5 points. The closed-ended section of the survey was divided into two sections. The first section was about the pre-class and connecting activities. The second section was about the in-class activities. Students positively responded to both sections. Also, the standard deviation (SD) is low, indicating that the scores are evenly distributed.

In the open-ended section of the survey, students were given an opportunity to give opinions and suggestions on the pre-class and in-class activities. In relation to the pre-class activities, 11 students wrote "don't have" or "nothing" and 19 students left longer comments which were then categorized into two, positive feelings and suggestions. 17 out of 19 students expressed positive feelings on the pre-class activities, while 2 students gave ideas for improvement. The following are several comments from students in relation to the pre-class activities.

TABLE 8
Students' Comments in Cycle 1

Positive Feelings	Problems/Suggestions
Enthusiastic before attending various content classes.	I think it can make me to improve my English but sometimes I think it's too much. If possible, reduce it a bit. Hahaha
I enjoyed the activities that the teacher organized. It's a lot of fun. It helps to review before studying and practice meditation. It's very good	There may be problems concerning the Internet.
Videos make us see the picture more clearly. I'm more interested. I want to have a video like this before I go to class and fun happy.	
It's good to have activities before studying online. Sometimes we will find information and get a basic understanding of what to study.	

Both the numbers from the closed-ended section and the comments from the open-ended section were valuable for the next steps of the study. They showed the direction for the model's improvement and what challenges to address.

Discussion

The model included three phases, pre-task, connecting activity, and in-class task. These three phases were adaptations from the flipped classroom model. From the results, the model was well-received by the experimental group. Students' responses in relation to the phases were mostly positive. The students felt happy and engaged. This finding is congruent with that of Ekmekci (2017), Fatemeh et al. (2020), and Hosseini et al. (2020). With the help of the phases, several students mentioned that the model was able to significantly improve their learning experience. This finding supports the findings of Anggoro and Khasanah (2022). Furthermore, this study found that the model was successful in improving students' writing skills. This supports the finding of Ekmekci (2017) that a flipped classroom model can help enhance students' writing skills.

In addition to the flipped classroom, the model integrated IRSs. The majority of students' responses and comments on these tools were positive. One notable point is that IRSs helped them gain motivation to do the tasks. They also had fun and felt engaged when doing activities on these platforms. This finding is in line with those of Awedth (2014), Chaiyo and Nokham (2015), Lee et al. (2019), and Turner (2015).

Another element of the model is TBLT. TBLT was integrated as activities in the pre-online class, connecting activity, and inonline class. From students' responses, it can be inferred that the students positively reacted to these activities. The activities helped them understand the content, have a lot of pre-class and in-class practice opportunities, and develop their English skills. Overall, students were happy with the TBLT activities. This study, thus, supports the findings of Putri and Nugraha (2022) that TBLT benefits students' English learning. It is also congruent with the findings of Oskoz and Elola (2014) that technology-mediated TBLT has positive effects on students' English skills, particularly writing. The study also supports that technology-mediated TBLT can foster students' learning motivation and active engagement (González-Lloret & Ortega, 2014).

Conclusion

This study introduces a novel online English teaching model developed by DBR that integrates three elements: the flipped classroom, interactive response systems, and task-based language teaching. From the results, the model has the potential to address a major problem in online English classes that is as a lack of students' engagement and participation. The findings also suggested that the model might improve students' English skills, including speaking and more significantly writing. The model was also enjoyed by students

as it received positive reactions. Students appreciated the interaction of the three elements both before and during an online class.

This research contributes to the area of online English learning models. It also suggests that the interaction of the three elements for use in a fully virtual setting benefits learners. Nonetheless, the model used in the experiment was a prototype and still requires further development. Additionally, though both writing and speaking skills improved, it is worthy to note that the improvement of the speaking skill is only slightly higher than the control group. Simplification of activities is also needed to reduce students' study load that might cause fatigue. These results lead to the improvement of the model development for future use. Future studies can address how the model interacts with other English skills and look for innovations to maximize the speaking achievement.

The Authors

Kiki Juli Anggoro is a doctoral degree student at Naresuan University, Thailand. He is also assistant professor at the School of Languages and General Education of Walailak University, Thailand. His research interest includes TEFL, CALL, and the use of online technologies in English classrooms.

Department of Educational Technology and Communications
Faculty of Education
Naresuan University
Phitsanulok, 65000, Thailand
Mobile: + 66 926743753
Email: kiki.an@mail.wu.ac.th

Supanee Sengsri is associate professor at the Faculty of Education of Naresuan University in Phitsanulok, Thailand.

Department of Educational Technology and Communications
Faculty of Education
Naresuan University
Phitsanulok, 65000, Thailand
Email: supanees@nu.ac.th

Kobsook Kongmanus is assistant professor at the Faculty of Education of Naresuan University in Phitsanulok, Thailand.

Department of Educational Technology and Communications
Faculty of Education
Naresuan University
Phitsanulok, 65000, Thailand
Email: kobsookk@nu.ac.th

Sudakarn Patamadilok is assistant professor at the Faculty of Education of Naresuan University in Phitsanulok, Thailand.

Department of Education
Faculty of Education
Naresuan University
Phitsanulok, 65000, Thailand
Email: sudakarnp@nu.ac.th

References

- Acharya, A. S., Prakash, A., Saxena, P., & Nigam, A. (2013). Sampling: Why and how of it. *Indian Journal of Medical Specialties*, 4(2), 330-333. <https://doi.org/10.7713/ijms.2013.0032>
- Ahmad, S. Z. (2016). The flipped classroom model to develop Egyptian EFL students' listening comprehension. *English Language Teaching*, 6(6), 166- 178. <https://doi.org/10.5539/elt.v9n9p166>
- Anderson, T., & Shattuck, J. (2012). Design-based research: A decade of progress in education research? *Educational researcher*, 41(1), 16-25. <https://doi.org/10.3102/0013189X114288>
- Anggoro, K. J., & Khasanah, U. (2022). A Flipped Classroom Model to Improve Students' Online EFL Learning. *TESOL Journal*, 13(1), e631. <https://doi.org/10.1002/tesj.631>
- Archambault, I., Pagani, L. S., & Fitzpatrick, C. (2013). Transactional associations between classroom engagement and relations with teachers from first through fourth grade. *Learning and instruction*, 23, 1-9. <https://doi.org/10.1016/j.learninstruc.2012.09.003>
- Armstrong, M., Dopp, C., & Welsh, J. (2020). Design-Based Research. In R. Kimmons & S. Caskurlu (Eds.), *The students' guide to learning design and research*. EdTech Books. https://edtechbooks.org/studentguide/design-based_research
- Awedh, M., Mueen, A., Zafar, B., & Manzoor, U. (2014). Using Socrative and smartphones for the support of collaborative learning. *International Journal on Integrating Technology in Education*, 3(4), 17-24. <https://arxiv.org/ftp/arxiv/papers/1501/1501.01276.pdf>
- Basal, A. (2015). The implementation of a Flipped Classroom in foreign language teaching. *Turkish Online Journal of Distance Education*, 16(4), 28-37. <https://files.eric.ed.gov/fulltext/EJ1092800.pdf>
- Chaiyo, Y., & Nokham, R. (2017). The effect of Kahoot, Quizizz and Google Forms on the student's perception in the classroom's response system. *Proceedings of 2017 International Conference on Digital Arts, Media and Technology (ICDAMT)*, 178-182. <https://doi.org/10.1109/ICDAMT.2017.7904957>
- Chen, M. R. A., & Hwang, G. J. (2020). Effects of a concept mapping-based flipped learning approach on EFL students' English speaking performance, critical thinking awareness and speaking anxiety. *British Journal of Educational Technology*, 51(3), 817-834. <https://doi.org/10.1111/bjet.12887>
- Córdoba Zúñiga, E. (2016). Implementing task-based language teaching to integrate language skills in an EFL program at a Colombian university. *Profile Issues in Teachers Professional Development*, 18(2), 13-27. <https://doi.org/10.15446/profile.v18n2.49754>
- Ekmekci, E. (2017). The flipped writing classroom in Turkish EFL context: A comparative study on a new model. *Turkish Online Journal of Distance Education*, 18(2), 151-167. <https://files.eric.ed.gov/fulltext/EJ1145315.pdf>
- El-Sawy, H. E. A. (2018). Flipping EFL University classes with blackboard system. *English Language Teaching*, 11(2), 31-43. <https://doi.org/10.5539/elt.v11n2p31>
- Fatemeh, K., Mahmoud, A., & Roman, K. (2020). Using interactive e-based flipped learning to enhance efl literature students' critical reading. *Science for Education Today*, 10(1), 25-42.
- González-Lloret, M., & Ortega, L. (2014). Towards technology-mediated TBLT. In M. González-Lloret & L. Ortega (Eds.), *Technology-mediated TBLT: Researching technology and tasks* (pp. 1-22). shorturl.at/cnrv9
- Hosseini, H. M., Ejtehadi, A., & Hosseini, M. M. (2020). Flipping Microlearning-Based EFL Classroom to Enhance Learners' Self-Regulation. *Language Teaching Research Quarterly*, 20, 43-59. <https://doi.org/10.32038/ltrq.2020.20.03>
- Kelly, A. (2014). Design-Based Research in Engineering Education: Current State and Next Steps. In A. Johri & B. Olds (Eds.), *Cambridge Handbook of Engineering Education Research* (pp. 497-518). Cambridge University Press. <https://doi.org/10.1017/CBO9781139013451.032>

- Lee, C. C., Hao, Y., Lee, K. S., Sim, S. C., & Huang, C. C. (2019). Investigation of the effects of an online instant response system on students in a middle school of a rural area. *Computers in Human Behavior*, 95, 217-223. <https://doi.org/10.1016/j.chb.2018.11.034>
- Liu, T. C., Liang, J. K., Wang, H. Y., & Chan, T. W. (2003). The features and potential of interactive response system. In *Proceedings of International Conference on Computers in Education (ICCE)*, 315-322.
- McKenney, S., & Reeves, T. C. (2013). Systematic review of design-based research progress: Is a little knowledge a dangerous thing? *Educational Researcher*, 42(2), 97-100. <https://doi.org/10.3102/0013189X12463781>
- Oskoz, A., & Elola, I. (2014). Promoting foreign language collaborative writing through the use of Web 2.0 tools and tasks. In M. González-Lloret & L. Ortega (Eds.), *Technology-mediated TBLT: Researching technology and tasks* (pp. 115-148). John Benjamins. <https://doi.org/10.1075/tblt.6>
- Putri, W. M., & Nugraha, S. I. (2022). Benefits and challenges of task-based language teaching on vocabulary learning. *Jurnal Pendidikan dan Konseling*, 4(4), 5662-5668. <https://doi.org/10.31004/jpdk.v4i4.6376>
- Richards, J. C. (2006). *Communicative language teaching today*. SEAMEO Regional Language Centre. <https://www.professorjackrichards.com/wp-content/uploads/Richards-Communicative-Language.pdf>
- Sandoval, W. (2014). Conjecture mapping: An approach to systematic educational design research. *Journal of the Learning Sciences*, 23(1), 18-36. <https://doi.org/10.1080/10508406.2013.778204>
- Sletten, S. R. (2017). Investigating flipped learning: Student self-regulated learning, perceptions, and achievement in an introductory biology course. *Journal of Science Education and Technology*, 26(3), 347-358. <https://doi.org/10.1007/s10956-016-9683-8>
- Tantiwich, K., & Sinwongsuwat, K. (2021). Thai university students' problems of language use in English conversation. *LEARN Journal: Language Education and Acquisition Research Network*, 14(2), 598-626. <https://so04.tci-thaijo.org/index.php/LEARN/article/view/253282/171972>
- Teng, B., & Sinwongsuwat, K. (2015). Improving English conversation skill through explicit CA-informed instruction: A study of Thai university students. *PASAA Paritat Journal*, 30(15), 65-104. <https://www.culi.chula.ac.th/publicationsonline/files/article2/oCDtVSS2xhSat104922.pdf>
- Teng, M. F. (2017). Flipping the classroom and tertiary level EFL students' academic performance and satisfaction. *The Journal of ASIA TEFL*, 4(4), 605-620. <http://dx.doi.org/10.18823/asiatefl.2017.14.4.2.605>
- Trees, A. R., & Jackson, M. H. (2007). The learning environment in clicker classrooms: Student processes of learning and involvement in large university-level courses using student response systems. *Learning, Media and Technology*, 32(1), 21-40. <https://doi.org/10.1080/17439880601141179>
- Turner, D. (2015). Psychosocial aspects of engagement with social media and digital technology—personal thoughts from the frontier. In A. Middleton (Ed.), *Smart learning* (pp.73-78). Sheffield Hallam University.
- Waluyo, B. (2019). Thai first-year university students' English proficiency on CEFR Levels: A case study of Walailak University, Thailand. *The New English Teacher*, 13(2), 51-71. <http://www.assumptionjournal.au.edu/index.php/newEnglishTeacher/article/view/3651/2368>
- Willis, J. (1996). *A framework for task-based learning*. Longman.

(Received December 10, 2022; Revised April 30, 2023; Accepted June 10, 2023)