# http://dx.doi.org/10.30587/jetlal.v7i2.5820

# **Experiencing EdPuzzle-based Listening Activity: Do the EFL students feel satisfied?**

Monica Indriya Lestari Universitas Muhammadiyah Sidoarjo Jl. Mojopahit 666B Sidoarjo

Fika Megawati\*
Universitas Muhammadiyah Sidoarjo
Jl. Mojopahit 666B Sidoarjo
fikamegawati@umsida.ac.id

Sheila Agustina Universitas Muhammadiyah Sidoarjo Jl. Mojopahit 666B Sidoarjo

Yonlada Tappha
Songkhla Technological College
Kachanawanit T. Khorupchan A. Meang Ch. Songkhla.

Correspondace: fikamegawati@umsida.ac.id

Received: 14th June 2023 Accepted: 25st August 2023 Published: 13th September 2023

# Abstract

In this sophisticated globalization era, the use of technology as a varied learning media affects student responses in the learning process. EdPuzzle is one of the interesting media that has been used for learning activities, including English listening activities. This medium helps teachers to ensure that students have seen the learning material as a whole and determine whether they have understood the content as well as the language. Thus, this study aims to investigate students' satisfaction on the English learning in virtual class through EdPuzzle. This study used survey and interview as the research design by using close-ended and open-ended questionnaire for quantitative also qualitative data. The subject of this research was the first-year students of Auto-mechanical program from one private colleges in Thailand. The results show that listening activities assisted by EdPuzzle is challenging and interesting for students. It gives different situation when the students try to comprehend the story as the learner's material as well as the source for assessment. The feature makes the students keep focusing on the whole stories before the finish the lesson. Thus, EdPuzzle is strongly recommended to be used in teaching to support the development of instructional activities using audio-visual sources. In addition, English teachers can be creative to provide teacher-made video to adjust the students' English proficiency.

**Keywords:** Learning media; Virtual Learning; EdPuzzle

## 1. Introduction

The development of technology is advancing every year. Unlike in the past, various jobs were done manually with various equipment either. In the 4.0 era, the use of technology is intensively used to facilitate human sustainability, in the fields of business management, and education. The personnel are required to acquire adaptive thinking, cognitive, and computational abilities, particularly in terms of technological knowledge and data analytics (Mian et al., 2020). The impact of rapid technological development forces the scope of education to keep up with developments in order to be more advanced and not look outdated. Especially when COVID-19 cases are high, the use of technology in education was increasing because all schools were closed due to lockdown, so learning was done virtually (Mahyoob, 2020). Virtual learning is a teaching and learning software solution that

allows teachers and students to communicate in an integrated online environment. It is used for online education through the World Wide Web (Bri et al., 2009). In the virtual learning model, teachers and students do not need to meet, learning activities can be done in front of a laptop camera or mobile phone anywhere (Phi et al., 2021). Google Meet can be used as a tool in virtual learning environment (Setyawan et al., 2020). In the end, every school is required to do virtual learning in every lesson, including in English learning. The use of virtual settings to improve and enhance language teaching and learning processes is becoming a common practice and in some cases, it becomes policy in a number of educational institutions (Afrin, 2020).

In learning English, listening is one of the skills that must be acquired by EFL (English as Foreign Language) learners because it affects daily communication activities. Listening is the first step of speaking; listening is important in the early stages of language development in a person's native language; similarly, listening was associated with an in line drop in the significance assigned to speaking in the early stages of learning among EFL learners (Nation & Newton, 2009). According to (Egilistiani & Prayuana, 2021), to help teachers and students in the listening learning process in the classroom, ICT (Information, Communication, and Technology) can be the right support. On the other hand, Video-based Language Learning (VBLL) can be used to provide virtual learning process. Videos are among the most popular technological tools in language instruction because to their visual, aural, and interactive aspects (Kaynar & Sadik, 2021). Many studies reveal the beneficial effect of VBLL in terms of learning outcomes, several studies argue that VBLL has the ability to increase learning outcomes since it assists teachers in delivering knowledge in an appealing and consistent manner (Zhang et al., 2006). The media used in English language learning which is currently quite popular is EdPuzzle. The use of this technology as a learning media really helps teachers to assess students.

EdPuzzle is a learning media that has a specific characteristic in the form of video as the source of learning. In EdPuzzle, the video is put by the teachers as the content that can be provided in leading educational sources such as YouTube, National Geographic, and TED Talks (Hidayat & Praseno, 2021). Teachers can also create and upload videos of their work for learning purposes. Each video can be customized by cropping, adding voiceovers, audio commentary, and adding questions. There are 3 types of questions that can be used for assessment, namely multiple choice questions, open-ended questions, and notes. After that, teachers can see students' learning activities in doing assignments through videos, percentage of assignment completion, and students' grades. A unique aspect of EdPuzzle is that it restricts skipping and provides a due date, so students must watch the whole video and answer all questions within the time limit (Zou et al., 2018). EdPuzzle provides a flexible setting for students to build self-regulated learning abilities while also introducing cooperation as well as participation and engaging students in the process (Silverajah & Govindaraj, 2018).

The process of learning through videos in EdPuzzle in English as Foreign Language (EFL) learning is very necessary, because it will help teachers determine their preferences, interests, and the types of materials they use to improve students' listening skills. In EdPuzzle, teachers can select instructional videos based on students' ability levels. The major duty of teacher when utilizing EdPuzzle is to carefully pick video content in accordance to the subject focus and current cultural reality of the target language's nation (Voss & Kostka, 2019). This is done so that the video content is more easily understood by students and makes learning more enjoyable and effective. Videos, either created by teachers or downloaded from the Internet, have become essential for preparing theoretical topics in the classroom by assisting students in better processing the knowledge (Andujar et al., 2020). The use of EdPuzzle gives positive contribution to listening courses since the application can encourage students to be engaged during the lesson. It is beneficial for teachers when they apply online learning because the interesting features that assist students comprehend listening materials more detailed, and the features make the students easier to receive listening sources provided by teachers, thus, EdPuzzle stimulate the students think critically (Tri et al., 2022).

There are previous studies that discuss the effectiveness of EdPuzzle. (Hidayat & Praseno, 2021) stated that the EdPuzzle application is beneficial for teachers and students in supporting listening learning, students can learn fun and teachers can see student progress and invite students to answer questions related to the available content (Ipek & Ustunbas, 2021). This media can improve students' listening skills. Students are more motivated to listen using EdPuzzle because they like the "rewatch" feature and automatic feedback (Mawaddah et al., 2022). Hamid (2022) revealed that it is interesting to use EdPuzzle as the listening assessment and it is authentic since the content provided videos that related to students' daily life. Apart from difficult tasks, learning through EdPuzzle can improve students' listening skills in a fun way. As stated by (Shabir & Nada, 2021), learning through EdPuzzle have positive impacts to the students, it engaged their motivation in learning English.

It can be concluded from the five previous studies that it is agreed that learning English becomes more interesting for students by using EdPuzzle. However, the references were only conducted in high schools in Indonesia and no research has been conducted by English students doing teaching practice in a college abroad. Therefore, in this study, the researchers were interested in investigating student satisfaction in virtual listening learning through EdPuzzle conducted at Songkhla Technological College, Thailand. The research question was formulated as follows:

"How is the students' satisfaction after participating in learning English in a virtual classroom through EdPuzzle?"

#### 2. Method

The subjects of this study were students at Songkhla Technological College, Songkhla, Thailand. Researchers took a sample of the first-year auto-mechanic class with a total of 19 students (N=19). Mix methods designs were chosen by researchers for collecting data. Quantitative and qualitative research are involved in mix methods designs. The data collection method used by researchers was survey with close-ended questionnaire for descriptive quantitative data and structured interview for the qualitative data to support quantitative statements. The questionnaire was chosen because this study will present student satisfaction with teaching English listening skills through EdPuzzle in a virtual classroom. Quantitative research is an approach for evaluating objective ideas involves investigating the connection among variables. These variables can be measured so that numerical data can be analysed statistically (Creswell, 2014). According to (Creswell, 2012), survey designs are quantitative research processes that include administering a survey or questionnaire to a small number of individuals (referred to as the sample) in order to identify trends in attitudes, opinions, behaviours, or attributes of a larger group of people (referred to as the population). The instrument used to obtain information and data is a questionnaire through Google Form given to students after virtual learning is carried out. The guideline is in the form of a modul consisting the way how to start learning with EdPuzzle for teacher and student in different device, laptop and cell phone, entitled Modul Pembelajaran Interaktif & Inovatif Dengan EdPuzzle (Interactive and Innovative Learning with EdPuzzle). The close-ended questionnaire is adapted from (Sakkir et al., 2020) by changing the topic from YouTube to EdPuzzle according to the researches' goals using fixed-response from Strongly Disagree, Disagree, Agree, and Strongly Agree and the interview questions are adapted from (Askar et al., 2009). The researchers then analyzed and calculate the data collection of students' opinions about learning through EdPuzzle by percentage technique. The researchers took 4 students as representatives for interview based on the active contribution and accessibility. The questions focused on their satisfaction feelings during the class with the application. The result of the interview was analysed descriptively after the transcript were translated into English.

When the learning activities with EdPuzzle happened, the researchers have prepared and shared the guideline for using the application as presented in Figure 1 where some selected pages from the modul are provided. This modul was made purposively to equip students to have an account in EdPuzzle as student since most of them do not have any experience learning with the application. The researchers trained the students first to activate their account before joining the learning activity.









Figure 1. Some selected pages from EdPuzzle modul

## 3. Results and Discussion

Student satisfaction is one of the important components for an institution to achieve more goals. Universities place a comparably important amount on student satisfaction as it reflects the well-being of students and how well the institution is performing in terms of meeting their expectations (Giang, 2022). Student satisfaction feedback is also described as students' perception of the services they get.

The results of student satisfaction in learning through EdPuzzle virtually are shown in Table 1. As this was the first time using EdPuzzle as a learning medium in the auto-mechanic class, some students found it difficult to use the platform. However, in general, most students gave positive feedback on the virtual learning process with EdPuzzle.

Table 1. Students' Satisfaction in Learning Through EdPuzzle (N=19)

No	Statement	Strongly Disagree		Disagree		Agree		Strongly Agree	
		f	%	f	%	f	%	f	%
1.	I like learning English using YouTube with EdPuzzle because there are pictures and animations.	2	10.5	5	26.3	6	31.6	6	31.6
2.	I like YouTube with EdPuzzle because I do not waste my time sitting in front of the screen without doing anything.	3	15.8	6	31.6	4	21.1	6	31.6
3.	During the learning English I was not happy, but after studying through YouTube with EdPuzzle I became happy learning English.	1	5.3	6	31.6	6	31.6	6	31.6
4.	I like learning English with YouTube with EdPuzzle because it is easy to understand.	0	0	5	26.3	6	31.6	8	42.1
5.	YouTube with EdPuzzle can make me know how to pronounce the English words well.	3	15.8	3	15.8	7	36.8	6	31.6
6.	I do not like learning English using YouTube with EdPuzzle because it makes me confused to repeat the words.	3	15.8	10	52.6	4	21.1	2	10.5
7.	Using YouTube with EdPuzzle I feel braver to increase my English listening skill.	1	5.3	7	36.8	4	21.1	7	36.8
8.	I can answer the exercise with EdPuzzle quickly and correctly.	2	10.5	8	42.1	4	21.1	5	26.3
9.	I get new experience in learning English with EdPuzzle.	0	0	3	15.8	9	47.4	7	36.8
10.	I hope to learn English with EdPuzzle in another topic.	1	5.3	4	21.1	7	36.8	7	36.8

Based on the information in Table 1, the number of students answer statement number 1 are as follow: strongly disagree 10.5%, disagree 26.3%, agree 31.6%, and strongly agree 31.6%. It means that they are interested in learning English using Youtube with Edpuzzle since the appealing presentation from the images and motions. This part shows positive impression from their perception. For statement number 2, the index of strongly disagree is 15.8% and disagree 31.6%. The index of agree is 21.1% also strongly agree is 31.6%. Statement number 3 shows that more students chose agree, with an index of strongly disagree of 5.3%, disagree 31.6%, agree 31.6%, and strongly agree 31.6% and strongly agreed with statement number 4. This was indicated by an index of agree 31.6% and strongly agree 42.1% and small number index of strongly disagree which is 0% and disagree 26.3%. Students agreed with statement number 5 that it helped them to pronounce English words well. This is shown by the index of agree 36.8% and strongly agree 31.6% with smaller number of strongly disagree and agree 15.8%.

The index of disagree and strongly disagree in number 6 are 52.6% and 15.8% is higher than agree 21.1% and strongly agree 10.5% which means that students disagree that they do not like learning with EdPuzzle. Then for statement number 7, it can be said that students agree with the statement bravery to increase English listening skill. Because the percentage of agree and strongly agree is higher at 21.1% and 36.8% than the percentage of strongly disagree and disagree which are 5.3% and 36.8%.

The result of statement number 8 shows that students still have difficulty in answering the exercises in EdPuzzle based on the high disagree and strongly disagree indexes of 42.1% and 10.5%. this point is related to the students' level of comprehension during the listening main activity. When they do not focus on what they listen, it is difficult or them to do the tasks. Dealing with experiencing something new or different in learning listening, the students agreed with number 9, 47.4%, strongly agree is 36.8%, and disagree is lower at 15.8%. As the last statement, students dominantly want to learn with EdPuzzle in different topics. This can be seen in the index of agree 36.8% and strongly agree 36.8%.

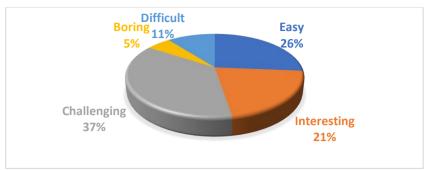


Figure 2. Students' Attitude in Learning Through EdPuzzle

Attitude has been held in psychological research. There are three primary characteristics of attitudes. First, an attitude is formed by interaction with an item. Second, it predisposes one to behave predictably in relation to an item. Third, an attitude is made up of either positive or negative assessment (Palmerino et al., 1984). Based on Figure 2, it shows students' attitudes toward learning through EdPuzzle after doing virtual learning based on the five categories of feelings, easy, interesting, challenging, boring, and difficult. Figure 2 shows 26.3% of students find it easy to learn with EdPuzzle. A total of 21.1% of students felt interested in learning with EdPuzzle because it was new to them. The majority of students chose challenging, this is indicated by an index of 36.8%. A total of 10.5% of students still find it difficult to learn with EdPuzzle. The last category is boring, where only 5.3% of students find this activity boring.

The results showed that most students gave a positive response to virtual listening learning through EdPuzzle. With this media, students feel easier and happier when learning English. However, some difficulties are still found in this learning process; the first problem arises because students cannot understand the teacher's explanation of the application, method, and guidelines; the second problem arises because of poor internet connection (Mawaddah et al., 2022). Improvements to demonstrate the use of the application are needed so that learning activities can run better without interruption.

Pertinent to English learning sources, Edpuzzle give an alternative way to deliver listening materials in term of Youtube video not only about a story like in narrative text but also other sources like news, song, and TV series where the students can learn world English from the video. Concerning teacher strategies, game-based learning can also be integrated into listening activities (Aulia et al., 2023). This activity also becomes the strategy for teachers in varying the implementation of EdPuzzle.

From the questions that have been asked on interview, 4 representatives gave information as presented in Table 2

T 11 A	TT1	CT .	, •
Iable /	The response	of Interview	dilections
raute 2.	THE TESPONSE	OI IIIICI VICW	questions

		response of finerview questions
No.	Question	Answer
1.	How easy is it for you to accomplish basic tasks the first time you encounter EdPuzzle?	Student 1, "It's easy because there are teachers who have taught us about the material and gave us guide to use EdPuzzle".
		Student 2, "It is easy to do the task on EdPuzzle".
		Student 3, "It is <b>not that hard</b> to do the task, I enjoyed doing it".
		Student 4, "It would be easier if teacher put more effort on making the task, like adding Thai subtitles, maybe".
2.	Once you have learned EdPuzzle, how quickly can you perform tasks?	Student 1, "Not really quick, but not slow either" Student 2, "The task is easy so I can do it quickly".
	quieny emilyen perjeum mana.	Student 3, "It's not a big problem to perform the tasks, I can do it fast".
		Student 4, "I usually take quite long to do English tasks, but I think I did it faster and better through EdPuzzle"
3.	How many errors do you make, how severe are these errors, and how	Student 1, "I don't make big mistakes or errors, so it's manageable"
	easily can you recover from the	Student 2, "I would really like to answer, but I don't know how
	errors?	to explain it".
		Student 3, "It's fine, I don't make any errors".

		Student 4, "Not much, if we make mistakes or errors we can turn back and fix the errors to make it right. Easy".
4.	How pleasant is it to use EdPuzzle?	Student 1, "It's good. I gain new experience from it. Because
		I have never known EdPuzzle before".
		Student 2, "It is a <b>good experience</b> to learn".
		Student 3, "It is <b>fun</b> , I like it".
		Student 4, "It is <b>nice application</b> . It's something new for me to
		learn with EdPuzzle".
5.	Are you able to understand the	Student 1, "Yes, I understand the material, so I can do the task
	materials given by the	given by the teacher easily".
	teacher? Explain!	Student 2, "Yes, I'm able to get the point of the material
	1	because I found it interesting and I like it".
		Student 3, "Absolutely, I gain something new from the materials given".
		Student 4, "I can learn the materials. Even though I don't do
		the task quickly, but I think teacher gave good
		tasks".

To know the expression of satisfaction, the researchers collected the information from four representative who were active in the class. The response show that they got meaningful experience with EdPuzzle as the new technology. In addition, a nice comment was expressed by one of the students to add Thai subtitle on the video. It indicates that they have different proficiency and some EFL students who in this context needs more exposure as the assistance to get accustomed to learn English through English story from Youtube or any other videos. This is in line with (Napikul et al., 2018) who found the contribution of video with Thai Subtitle in English Listening and vocabulary learning. Dealing with students' performance, the answers show that they could follow the instruction although the outcome depend their different comprehension capacity.

## 4. Conclusion

Along with the development of technology, this situation also affects the world of education. There are many applications and websites on the internet that can be used for teaching and learning activities. One of the recommended is EdPuzzle. EdPuzzle is a learning application that allows the use of video clips to support the learning process. The use of video clips in learning can help teachers and students to better understand what they are learning. In addition, this application also aims to make teaching and learning activities more fun and not boring. Overall, this study shows that the majority of students give positive responses to virtual listening learning through EdPuzzle. Satisfaction were expressed from the dominant response of questionnaire and then specified on interview results, especially for those who selected Learning with EdPuzzle is easy. Thus, researchers suggested to use EdPuzzle in teaching to support the development of instructional activities using audio-visual sources. For future researchers, the investigation can be expanded to the content of video used from teacher-made materials to support EdPuzzle-based learning followed Thai subtitle as the additional innovation.

# 5. Acknowledgement

We would like to express our gratitude to the participants of this study. Furthermore, thank you DRPM UMSIDA for giving an opportunity to have an abroad experience through International Internship and Teaching Practicum.

## 6. References

Afrin, M. (2020). Virtual EFL Classes during COVID-19 in Bangladesh: Pros and Cons with Possible Solutions at Tertiary Level. *International Journal of English Language & Translation Studies*, 08(02), 77–86.

Andujar, A., Nadif, F. Z., & Andujar, A. (2020). Evaluating an inclusive blended learning environment in EFL: a flipped approach. *Computer Assisted Language Learning*, 1–30. https://doi.org/10.1080/09588221.2020.1774613

- Askar, P., Dönmez, O., Kizilkaya, G., Çevik, V., & Gültekin, K. (2009). Dimensions of Student Satisfaction on Online Programs. In Encyclopedia of Distance Learning. *IGI Global*, 585–590. https://doi.org/10.4018/978-1-60566-198-8.ch091
- Aulia, V. M., Megawati, F., & Mamta Aulia, V. (2023). Exploring teacher's strategy in teaching listening through songs at eleventh grade of SMA Walisongo gempol. *Applied Research on English Education (AREE)*, *I*(1), 25–36.
- Bri, D., García, M., Coll, H., Lloret, J., & Vera, C. (2009). A Study of Virtual Learning Environments. WSEAS Transactions on Advances in Engineering Education, 6(1), 33–43.

- Creswell, J. W. (2012). Educational Research: Planning, Conducting, and Evaluating Quantitative and Oualitative Research Fourth Edition.
- Creswell, J. W. (2014). Research Design Qualitative, Quantitative, and Mixed Method Approaches Fourth Edition.
- Egilistiani, R., & Prayuana, R. (2021). Students' Responses through the Use of Edpuzzle as an Application in Achieving Listening Comprehension. *Linguists : Journal Of Linguistics and Language Teaching*, 7(2), 63. https://doi.org/10.29300/ling.v7i2.5469
- Giang, N. D. H. (2022). A Study on the Satisfaction and Performance of the First Year Students of Advanced Education Program at National Economics University when Applying Internet in Teaching English Listening Skills. 10(5), 288–297. https://doi.org/10.12691/education-10-5-4
- Hamid, S. F. (2022). Students' Perception of Using Edpuzzle in Listening Assessment. *PRIMACY: Journal of English Education and Literacy*, *I*(1), 15–24.
- Hidayat, L. E., & Praseno, M. D. (2021). Improving Students' Writing Participation and Achievement in an Edpuzzle-Assisted Flipped Classroom. *Education of English as Foreign Language*, 4(1), 1–8. https://doi.org/10.21776/ub.educafl.2021.004.01.01
- Ipek, O. F., & Ustunbas, Z. (2021). Applications Used in Distance Education for English Language Classrooms. *JET (Journal of English Teaching)*, 7(3), 260–272. https://doi.org/10.33541/jet.v7i3.3027
- Kaynar, N., & Sadik, O. (2021). The Effects of Authentic and Interactive Video Tasks on Students 'Extra Listening Practices Özgün ve Etkileşimli Video Alıştırmalarının Öğrencilerin Dinleme Uygulamaları Üzerindeki Etkileri Educational technology includes many beneficial tools and resou. 14(July), 291–307. https://doi.org/10.30831/akukeg.836313
- Mahyoob, M. (2020). *Challenges of e-Learning during the COVID-19 Pandemic Experienced by EFL Learners*. *11*(December), 351–362. https://doi.org/https://doi.org/10.24093/awej/vol11no4.23
- Mawaddah, N., Mustofa, M., & Putra, I. S. (2022). Improving Students 'Listening Ability Using Edpuzzle. Journal of English Education and Applied Linguistics, 11(1), 65–81.
- Mian, S. H., Salah, B., Ameen, W., Moiduddin, K., & Alkhalefah, H. (2020). Adapting universities for sustainability education in industry 4.0: Channel of challenges and opportunities. *Sustainability* (Switzerland), 12(15).
- Napikul, S., Cedar, P., & Roongrattanakool, D. (2018). The Effects of Film Subtitles on English Listening Comprehension and Vocabulary. *International Journal of Applied Linguistics and English Literature*, 7(6), 104. https://doi.org/10.7575/aiac.ijalel.v.7n.6p.104
- Nation, I. S. P., & Newton, J. (2009). *Teaching ESL / EFL speaking and listening*. Palmerino, M., Langer, E., & McGillis, D. (1984). *Springer Series in Social Psychology*.
- Phi, V., Pham, H., Nguyen, T., & Vo, D. (2021). *CALL in Asia During Covid-19 and Models of.* 533(AsiaCALL), 1–10.
- Sakkir, G., Dollah, S., & Ahmad, J. (2020). Students' Perceptions toward Using YouTube in EFL Classrooms. *Journal of Applied Science, Engineering, Technology, and Education*, 2(1), 1–10. https://doi.org/10.35877/454ri.asci2125
- Setyawan, A., Aznam, N., & Citrawati, T. (2020). Effects of the Google Meet Assisted Method of Learning on Building Student Knowledge and Learning Outcomes. 8(9), 3924–3936. https://doi.org/10.13189/ujer.2020.080917
- Shabir, M., & Nada, C. (2021). Students' Perception on the Use of Vidio in Learning English As a Foregin Language During Pandemic. *English Journal*, 15(2), 109. https://doi.org/10.32832/english.v15i2.5538
- Silverajah, V. S. G., & Govindaraj, A. (2018). The Use of Edpuzzle to Support Low-Achiever's Development of Self-Regulated Learning and their Learning of Chemistry Students' Development of Self-regulated. 18—22. https://doi.org/10.1145/3290511.3290582
- Tri, P. M., Uyen, L. T. T., Uyen, M. T. H., Trang, T. T. T., & Thuy, N. T. C. (2022). *EFL Students' Challenges of Online Courses at Van Lang University during the COVID-19 Pandemic*. 2. https://doi.org/https://doi.org/10.54855/ijte.22221
- Voss, E., & Kostka, I. (2019). Flipping Academic English Language Learning (1st ed.). Springer Singapore. https://doi.org/https://doi.org/10.1007/978-981-13-8657-2
- Zhang, D., Zhou, L., Briggs, R. O., & Nunamaker, J. F. (2006). *Instructional video in e-learning: Assessing the impact of interactive video on learning effectiveness.* 43, 15–27. https://doi.org/10.1016/j.im.2005.01.004
- Zou, D., Xie, H., & Zou, D. (2018). Flipping an English writing class with technology- enhanced just-in-time teaching and peer instruction just-in-time teaching and peer instruction. *Interactive Learning Environments*, 1–16. https://doi.org/10.1080/10494820.2018.1495654