

The Effectiveness of Synchronous Online Flipped Learning in College EFL Reading Course During the COVID-19 Epidemic

Guihua Ma (✉ 605244593@qq.com)
xi'an international university

Research Article

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Abstract

The purpose of this study was to examine the effectiveness of synchronous online flipped learning (SOFL) when no one can go to school and merely rely on online learning during the COVID-19 epidemic. According to community of inquiry (Col), put forward by Garrison et al (2001), only when the three key elements of blended teaching, social presence, teaching presence and cognitive presence reach a high level, can effective learning occur, which were used as the framework of this study. Mixed methods were used to evaluate the effectiveness of SOFL teaching. A total of 60 undergraduates from pre-service English teacher training program participated in an online questionnaire survey and 25 of them voluntarily joined online in-depth interviews. Results showed that the learning effect was improved in SOFL context. Anonymity was found to improve learning in asynchronous online learning while distraction and lack of sustainable attention were found in synchronous online learning session. The findings suggest that instructors may need to have a careful design, strict organization and scientific implementation of synchronous online teaching and learning in order to achieve distinctive teaching effects, and that they may also consider the complex influence factors of synchronous and asynchronous online learning to arouse students' interest and attention, and meet their learning needs (Wong 2020).

Introduction

Since the outbreak of COVID-19 at the end of last year, the time for returning to school for spring semester has been pushed back in China, and traditional classroom teaching mode is also difficult to continue, online teaching has become the sole choice to make. The Ministry of Education in China requires colleges and universities to make full use of online MOOCS and high-quality online teaching resources at national, provincial and school-based levels to implement synchronous online teaching and learning. Supported by China's university MOOC platform and national virtual simulation experiment teaching resource platform, together with a large number of small private online courses (SPOC) at different colleges and universities and other educational and training institutions online courses, China's tertiary education actively carry out online teaching and learning since early February to guarantee teaching progress and teaching quality during the epidemic prevention and control period.

However, the new epidemic situation has brought unprecedented challenges to teaching, learning, education management, and teaching effectiveness, etc. Firstly, the majority of teachers should quickly play the role of online teaching organizers and **administrators**,

have a quick improvement of information tech literacy, organize online classroom with novel teaching method and attractive teaching content, so as to maintain students' learning enthusiasm and learning effect. Secondly, online learning requires students have high level of learning autonomy and self-discipline. For students with low self-control, online learning effect will be very poor, which will undoubtedly aggravate serious polarization of top and poor students. Thirdly, curriculum evaluation, teacher assessment management, and teaching quality monitoring, etc. have all undergone significant changes under online teaching mode.

For the online teaching mode during the COVID-19 pandemic, several scholars put forward different online teaching modes, online live teaching, autonomous learning and flipped learning, synchronous online teaching plus asynchronous online learning, etc. (Zhu & Peng 2020; Jiao & Zhou 2020; Zou et al, 2020; Wong 2020). However, no matter what teaching mode is adopted, making online teaching and learning more effective during the epidemic is the prominent concern. At present, there are few studies on the effectiveness of different online teaching modes during the COVID-19. Therefore, this study explored the effectiveness of synchronous online flipped learning (SOFL) teaching in college comprehensive English reading (CER) course for second year undergraduates in pre-service English teacher training program.

An overview of studies on flipped learning and online learning

Flipped learning, as one important approach of blended learning mode, employs high-quality online education resources of MOOC or SPOC to transform traditional classroom learning from “teaching before learning” to “learning before teaching”. This teaching mode not only realizes the trend of deep integration of information technology and education, changes the traditional teaching mode of teachers paying great attention to information transmission and knowledge teaching, embodies the learner-centered education concept (Yang 2016), but also conforms to the cognitive law of human beings and reflects the advantages of blended learning, helps to build a new relationship between teachers and students, and promotes effective utilization, research and development of teaching resources (He 2016). The existing researches on flipped learning mainly focus on its

feasibility, applicability, influence factors, effectiveness in different subject courses. However, the effectiveness of flipped learning in foreign language teaching is still limited (Yang et al 2017).

The development of online education has generally experienced three generations around the world. The first generation was mainly online PPT courseware with text, pictures and audios. The second generation was based on MOOC or SPOC courses with micro videos, exercise and tests. The third generation is synchronous online teaching with simultaneous interaction between teachers and students during instruction and learning. Online live education as the third generation of new education form has been developing rapidly and widely used nationwide, especially during the COVID-19 pandemic. In synchronous online classroom, teachers and learners are no longer satisfied with static learning methods such as online test and video watching. They are trying new learning forms that are more intuitive, interactive and more direct. Teachers implement synchronous online teaching through online platforms, such as Tencent conference, Zoom, Wechat, QQ, etc. Synchronous online teaching realizes simultaneous interaction between teachers and students, breaking the traditional static online learning of watching courseware or video lecture. During synchronous online teaching, teachers can flip the class, or give a lecture, while students can also discuss, share and interact directly with teachers and classmates. In this way, teachers can have simultaneous supervision of students' learning process and examine learning effect. However, the most apparent weakness of synchronous online teaching is network jams or congestion, which have direct impacts on the smoothness of synchronous online teaching. At present, researches on the teaching effect of synchronous online teaching have just begun. Based on the advantages of flipped classroom and synchronous online teaching, this study is going to examine the effectiveness of synchronous online flipped classroom teaching mode in college CER course.

Foundation

The foundation of SOFL was community of inquiry (CoI) framework proposed by Garrison et al (2001), as shown in Figure 1. Based on years of blended teaching practice at the University of Athabasca in Canada, Garrison et al. put forward three key elements of

blended teaching on the basis of constructivism, namely, social presence, teaching presence and cognitive presence. In the following researches, Garrison (2007), Garrison et al. (2009) discovered that only when these three kinds of presence reach a high level, can effective learning occur.

According to Garrison (2009), social presence is defined as the ability of learners to identify with the community of curriculum learning. Learners can communicate meaningfully in an environment full of trust and develop interpersonal relationships through full display of personality characteristics. Cognitive presence describes the process in which learners acquire meaning construction and understanding through continuous reflection and discussion. The central element of the model is teaching presence, which means that teachers or some learners can help learners realize the construction of personal meaning and the learning results with educational value by designing and organizing teaching activities, promoting conversation and direct guidance. These three presences work together in the dynamic learning process and create profound and meaningful learning experience (Kayo & Garrison 2008). In the past ten years since CoI framework was put forward, thousands of scholars in various countries have verified it in their own teaching environment, and the results proved the effectiveness of the framework. Henceforth, the framework has been widely used to guide the design and implementation of blended teaching.

The framework of synchronous online flipped learning

ChaoXing (superstar) platform is an information-based teaching system, which covers the whole process of online teaching and learning, and integrates various teaching applications for teachers, students, and administrators at PC terminal or mobile terminal. In this system, teachers can prepare lessons before class, direct teaching in class, grade homework after class and implement formative evaluation during the synchronous and asynchronous learning process. The SPOC of the CIR course has been established on ChaoXing platform in 2018, and the course resources include micro lecture, courseware, extended readings, exercises, tests, etc. The SPOC of this course has laid a good foundation

for the smooth implementation of synchronous online flipped learning during the COVID-19 pandemic.

Two weeks before the spring semester, our university had conducted online teaching skills training for faculties through ChaoXing platform, including course construction, synchronous online teaching, course videotaping, online interaction, online resource utilization, online teaching evaluation and management, etc. Meanwhile, in order to prevent or deal with online congestion or other unexpected problems, teachers were required to choose other auxiliary teaching platforms, such as Tencent conference, WeChat or QQ conference, nailing conference, Zoom, etc., to ensure the stability and smoothness of synchronous online teaching during the epidemic. Before synchronous online teaching started, the researcher instructed students how to use the mobile terminal apps of the main platforms recommended by the department through the class QQ group or WeChat group. During the synchronous online teaching period, students' learning problems were timely solved in class, or the SPOC discussion forum in asynchronous learning before or after class.

Under the guidance of CoI framework, this study constructed SOFL framework in CER course (see Figure 2), which were divided into three learning stages. At the pre-class stage, students were required to watch micro-lecture videos, read supplementary articles, complete the output task according to the main content they have learned, and upload the completed written assignment to the SPOC platform. Whenever they encountered problems in pre-class learning, they could interact with the teacher or students in online discussion forum or WeChat or QQ class group. At the in-class stage, synchronous online flipped learning was adopted. In order to increase social presence, cognitive presence and teaching presence during this stage, three main procedures were carried out. Firstly, students presented the output task completed before class, next the teacher gave feedback and comments, and after that the teacher summarized typical problems in students' production task. Secondly, the teacher conducted just-in-time teaching or peer-instruction according to the problems summarized either in online discussion forum or output task presentation period. Thirdly, various learning activities, for instance, discussion, debates, role plays, simulation negotiations, etc., would be held so that students would have more opportunities

to interact with the teacher and peers, to further digest, absorb and apply what they learned. During the synchronous online teaching period, the teacher would randomly pick a student to answer questions, participate in discussion, share opinions, etc. in order to sustain their attention and also supervise their learning state. The teacher evaluated students' performances in various aspects during synchronous online learning stage. At the post-class stage, according to the students' performance of knowledge internalization and absorption in synchronous online learning stage, extended task was designed to further consolidate learning content. The completed written homework should be uploaded again to the platform, and the final chapter test would be completed at last. During this stage, when coming across learning problems, students could still interact with the teacher and peers.

In view of the limitations of mere summative assessment in learning promotion, accordingly, the evaluation of CER course was formative, which adapts to the flexible and changeable characteristics of teaching process (Paloff & Pratt 1999), and pays attention to complex learner factors as much as possible. The formative assessment can accurately and reliably evaluate the effectiveness of students' synchronous and asynchronous online learning according to students' various performance and the big dynamic data on the SPOC platform reflecting learning participation and completion during different learning stages. The formative assessment in CER course included asynchronous online learning, discussion, assignments, tests, etc., synchronous online attendance and interaction. The evaluation content, methods and proportions of each part of the CER course were shown in Table 1.

Table 1 The formative evaluation in CER course

Evaluation content		Evaluation methods	Proportions
Asynchronous online learning	Courseware click frequency Assignments and homework Discussion area usage frequency	Course platform evaluation Teacher evaluation Course platform evaluation	10% 10% 10%
Synchronous online performance	Attendance Pre-class task presentation Discussion and interaction question raising & answering	Course platform evaluation Teacher & peer evaluation Teacher evaluation Teacher evaluation	5% 10% 15% 10%
Tests	In-class tests Post-class chapter tests Online final test	Course platform evaluation Teacher evaluation Course platform evaluation & teacher evaluation	5% 5% 20%

Methodology

This mixed-methods study was undertaken to examine the effectiveness of SOFL in CER course. The implementation effect of blended teaching mode is generally reflected by students' satisfaction with the course (Spanjers et al. 2015; Rahman et al. 2015; Ekwunife-Orakwune & Teng 2014; Owston et al. 2013). In other words, the evaluation of teaching effect is largely based on students' feedback on the course, which involved their feelings, suggestions, views and self-evaluation of learning effect of SOFL in this course. Students' course satisfaction can reflect their cognition and learning experience in the course, and it is of great significance to the test and improvement of SOFL. In view of this, this study explored the effects and problems of SOFL through students' satisfaction with CER course. The main research question that framed this study was: What is the degree of students' satisfaction with CER course SOFL? The answers to this question were derived from the data collected via a survey and focus group interviews.

The survey participants were 60 second-year undergraduates in pre-service English teacher training program at a private university in China. About 70% of them obtained China's college English test (CET) band 4 to 6 (between the range of intermediate user and advanced user) at the onset of synchronous online teaching semester during the COVID-19, and as the program requirement, the rest of them would be required to pass this test before they graduate. At the end of the study, the participants were asked to take an anonymous online survey, which was designed with the consideration of the real situations of the students, reference to Col framework by Garrison et al (2001), and students' satisfaction questionnaire by Wu et al. (2010) for blended learning environment. The survey covered five parts: social presence, teaching presence, cognitive presence, teaching evaluation and learning effect, with 16 items in total. Each item described the expected teaching effect in detail, while the students' answers would reflect the actual learning experience and learning effect. The survey was built on a five-point Likert scale (range

from “strongly dissatisfy” to “strongly satisfy”, 1-5) to seek the participants’ degree of satisfaction with each of the statement. After the survey was administered, 25 students among them volunteered to participate in focus group interviews, which were recorded and later transcribed. Focus group interviews were conducted to gain a deeper understanding of the participants’ satisfaction with SOFL in this course. Besides complementing the survey’s results, the qualitative data of the interview would be able to discover the problems of SOFL in CER course.

Data collection

Data were collected from two sources. Firstly, the survey of students’ course satisfaction was conducted when the course was completed at the end of the study in early July. They were informed that the results of the survey were only used for research and would not have any impact on their course grades. In this way, they were encouraged to give the most authentic answers possible to the survey, which was carried out online in the time of the COVID-19. Secondly, 25 participants were willing to participate in the focus group interviews, which were also done online via WeChat videoconferencing after they finished the survey, and in the interviews, they were asked to explain in detail why they were satisfied or not satisfied with a certain aspect of SOFL in CER course based on their own learning experience. Before the interview, the researcher stated to them that no matter what opinions they expressed, it would not affect their final scores of the course. This was to dispel their concerns, make their opinions real and natural, and provide objective and reliable data for the study. Each interview was conducted separately in about 10 minutes. All the interviews were videotaped and transcribed into texts afterwards.

Data analysis

The results of the survey and interviews were fully utilized for data analysis. In the first place, the survey results were sorted out and put into SPSS for the mean value and one sample t-test analysis. Next, the data collected in the focus group interviews were recorded and transcribed. The transcripts were repeatedly read to fully understand the interviewees’ ideas and opinions. After that, the text materials were analyzed, classified and sorted according to the aspects and dimensions involved in the interviews.

Results And Discussion

Survey findings

So & Brush’s (2008) studies proved that students had high satisfaction with blended teaching, and they also discovered that clear teaching guidance, teaching activities, face-to-face support, and cooperation ability were all important factors affecting students’ satisfaction with blended teaching. Garrison et al (2008, 2010) discovered that only when social presence, teaching presence and cognitive presence reach a high level, can effective learning occur.

Table 1 presented students' satisfaction with the five dimensions of SOFL in CER course. Generally, most of them (more than 50%) expressed satisfaction with SOFL. The average value of "rich types of online learning resources" (M=4.35) in cognitive presence was the highest, followed by the second and third highest "enhanced communication between T & Ss and Ss & Ss" (M=4.30) in social presence, and "just-in-time teaching or peer instruction" (M=4.28) in teaching presence. The fourth and fifth were "promoted autonomous learning and personalized learning" (M=4.26) in cognitive presence and "beneficial to monitor, supervise and feedback the learning process" (M=4.24) in teaching evaluation. Additionally, the lowest three were "maintained sustainable interest and attention" (M =3.64) in social presence, "promoted the ability to think critically and solve problems" (M=3.87) in learning effect, and "upgraded learning motivation" (M =3.96) in cognitive presence.

Furthermore, one sample t-test was conducted to further process the data to see whether they were significant. The test value was set to 3, which was the corresponding value of "neutral". The results indicated that all of them were significant ($P < 0.05$). in other words, the survey results displayed that, on the whole, most participants (more than 50%) were satisfied with SOFL in CER course, and generally the cognitive and teaching presence reached a higher level than social presence. This study also found that teaching evaluation and learning effect were also very critical factors influencing course satisfaction in blended learning context.

Table 2 The results of course satisfaction degree of SOFC (* $P < 0.05$)

Dimensions	Detailed descriptions of the dimensions	M	SD	t
Social presence	enhanced communication between T & Ss and Ss & Ss	4.30	0.71	12.276*
	improved ways and forms of interaction between T & Ss and Ss & Ss	4.09	0.70	11.054*
	maintained sustainable interest and attention	3.46	0.56	13.637*
Teaching presence	clear objectives for learning tasks	4.01	0.53	9.247*
	just-in-time teaching or peer instruction	4.28	0.58	9.567*
	just-in-time supervision and reminder by the teacher	4.15	0.74	11.341*
Cognitive presence	promoted autonomous learning and personalized learning	4.26	0.72	12.539*
	upgraded learning motivation	3.96	0.67	8.561*
	rich types of online learning resources	4.35	0.69	10.681*
	various forms of in class learning activities	4.23	0.73	12.951*
	improved knowledge digestion and absorption	4.16	0.84	5.936*
Teaching evaluation	beneficial to monitor, supervise and feedback the learning process	4.24	0.63	12.348*
	helpful to examine learning effect in time	4.03	0.66	9.047*
Learning effect	improved communication and expression skills	4.15	0.75	12.451*
	promoted the ability to think critically and solve problems	3.87	0.79	5.982*
	enhanced the ability to use information technology	4.17	0.68	10.564*
	improved learning effect in general	4.20	0.62	9.184*

Focus group interview results

Three relevant viewpoints were obtained from the qualitative analysis of the focus group interviews. First, Anonymity in asynchronous online learning was discovered to be preferred by the participants. Furthermore, the other two viewpoints proved the survey results reported above, namely, “effective learning in SOFC” and “difficult to maintain sustainable interest and attention in synchronous online learning session”.

Anonymity

Anonymity was identified as a preferred identity subscribed by the interview participants in asynchronous online learning. It was found that they were more active in question raising and discussion forum for asynchronous online learning, but in synchronous online learning session, 76% of the students would not like to be the first to speak or ask

questions in interaction activities. With respect to this, Miyazoe & Anderson (2011) discovered that online discussion and collaboration in an anonymous way was an effective blended teaching strategy, which could reduce students' pressure and fear, and enhance their participation. In the focus group interviews, a number of the participants were found preferring anonymity for online discussion at asynchronous learning stage. Their anonymity mindset was reflected in their detailed responses as follows:

"I would like to be anonymous for discussion forum, because... I feel free to express my views...without being fear or embarrassed by the wrong answers or asking simple questions." (participant 3)

"For interaction in class, sometimes I was unwilling to raise questions or problems for fear of losing face...but I like to have a personal talk with the teacher or certain close classmate online. I don't know how to overcome this kind of fear or worry. Right, ..., if we could use pseudonyms to communicate online, perhaps I would feel better." (participant 8)

These statements accord with Miyazoe & Anderson's (2011) findings that using pseudonyms for asynchronous online learning can be an effective teaching strategy that induces higher online participation, especially among students who are hesitant to participate in a traditional classroom setting. Most of them admitted that they would like to be anonymous for online discussion or interaction.

Effective learning in SOFL

Studies on flipped learning promoting students' effective learning come from many disciplines, such as mathematics, engineering, modern educational technology, computer,

EFL, etc. (Lage et al. 2000; Day & Foley 2006; Gannod et al. 2008; Huang et al. 2014). Lage et al's (2000) research on economics flipped classroom is representative. Their research showed that flipped classroom teaching and students' learning style match well, and students' harvest in flipped classroom was greater than that in traditional classroom. Furthermore, they preferred hands-on practice, group activities and interaction with peers, and they felt it was more comfortable to ask questions in informal flipped classroom.

In the interview, a majority of the participants (86.79%) agreed that they preferred SOFL to traditional online learning, MOOC or SPOC, in that SOFL promoted social presence, cognitive presence and teaching presence, increased opportunities to interact with the teacher and peers, and improved learning effect. Some of these comments from the participants in the interviews are presented below:

"I think SOFL is very good, because I can communicate with the teacher and classmates in synchronous online session. But in MOOC or SPOC, I usually get delayed feedback in discussion forum. And also, I spent more time to learn... I try to do my best to make good performance." (participant 12)

"I prefer SOFL a lot, because the learning effect is better than... asynchronous online learning. More importantly, I think I have achieved much more, er, like, more chances to communicate with teacher and classmates, get timely feedback from them. I am confident I can do better later." (participant 17)

Difficult to maintain sustainable attention in synchronous online learning session

Garrison et al (2001) emphasized in CoI framework that effective learning could occur when social presence, teaching presence and cognitive presence reached a high level. The

interviews of this study discovered that SOFL built an effective learning context with a comparatively satisfactory cognitive, teaching and social presence.

Jacob & Radhai's (2016) finding was that students may need extra motivation and self-discipline to be successful in online learning. Wong's (2020) study found that synchronized online learning was not effective enough to arouse students' motivation nor sustain their attention. This study's interview also revealed that it was difficult to maintain sustainable interest and attention in synchronous online learning context. Some of their elaborated responses were as follows:

"In synchronous online learning session, I still feel lonely, 'cause no one sit around me, I just talk to the screen, and sometimes get no instant response from them due to the network jam or stuck. I was also wondering whether they paid any attention to my words. On the other hand, I often get distracted or interrupted by some ads, chat messages or calls when I use my smart phone to learn synchronously." (participant 20)

"Compared with synchronous online learning, I think face to face classroom learning has better learning atmosphere, because, you know, I can make eye contact with them, and see their responses. But now, I sometimes ...feel lonely, almost learn individually or talk without anyone looking at me. And a lot of online interference information will jump out from time to time to affect attention. At last, learning environment at home sometimes is too noisy ...er...like other family members get around or talk in the next room, so it is easy to be diverted. I hope situation will become better soon and I can return to normal school life." (participant 24)

Conclusion And Implications

The study presented the effectiveness of SOFL in college CER course during the COVID-19 pandemic. It contributes to scholarly understanding and practical implementation of synchronous online learning for EFL education at tertiary level. The findings revealed that the learning effect was improved in SOFL

context. Anonymity was found to improve learning in asynchronous online learning while distraction and lack of sustainable attention were found in synchronous online learning.

However, several limitations of the study need to be addressed. Firstly, as data were collected from a small number of pre-service English teacher training program in a university in China, the findings of the study may not be directly applicable to synchronous online learning in secondary education or other research contexts. Secondly, the study lasted solely one semester during the school suspension period in the time of COVID-19, and it is thus possible that the findings would have been different if the study had been conducted in a much longer period of time. Thirdly, the framework of SOFL was constructed with the guide of community of inquiry mode and the consideration of the learning content, needs and characteristics of ISE course, it may not be immediately relevant to courses in other disciplines.

Despite these limitations, the study provides valuable insights into synchronous online learning and has some significant implications for EFL tertiary education. In the first place, instructors may need to have a careful design, strict organization and scientific implementation for synchronous online teaching and learning in order to achieve distinctive teaching effects. Of course, there is no fixed mode for synchronous online teaching, which needs continuous exploration and innovation faced with the still severe COVID-19 situation. Only by integrating the innovative ideas, synchronous online teaching and learning can make EFL education full of vitality and charm. In the second place, instructors may also consider the complex influence factors of synchronous and asynchronous online learning to arouse students' interest and attention, and meet their learning needs (Wong 2020).

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Figures

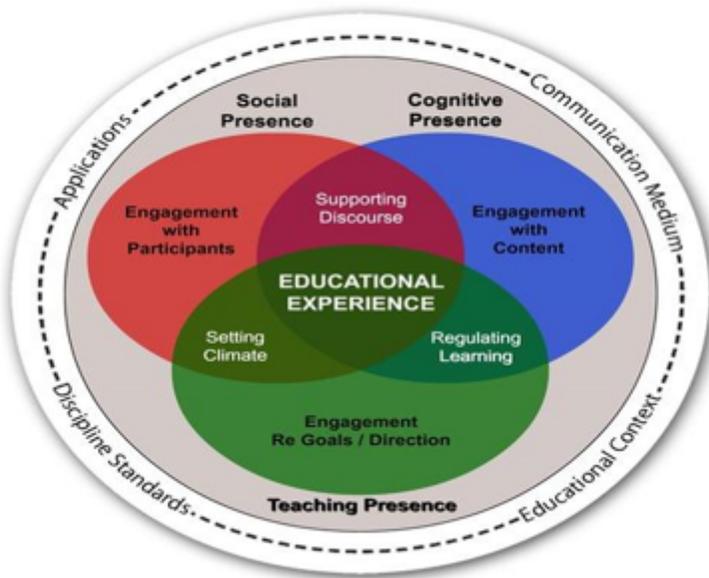


Figure 1

The framework of CoI (Garrison et al. 2001)

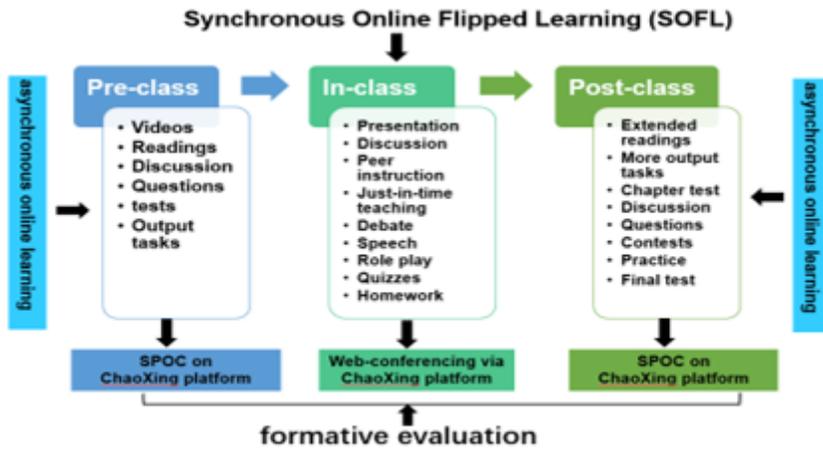


Figure 2

The framework of SOFL in CER course