Online Learning during the Pandemic: A Qualitative Investigation of L2 CLIL Students' Perceptions and Learning Challenges in China

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Abstract: Since the outbreak of COVID-19 in 2019, online-based learning has become a prevailing trend for studying subject matters globally. Additionally, there is an increasing number of international schools teaching CLIL courses to domestic students and many of them are conducting classes online during the pandemic in China. Although the Content and Language Integrated Learning (CLIL) approach has been widely researched in European countries, there hardly exists investigations of distance learning within the CLIL context in Asia, especially in China. Therefore, to fill the gap, this qualitative study investigates Chinese EFL students' differential perceptions, learning process, and learning challenges towards offline and online CLIL classes. Six participants (four females and two males), who are L2 learners of English of similar ages (from 17 to 19) studying the same curriculum from one international high school in China, participated in semi-structured interviews (each lasting for an hour) to retrospectively reflect upon their learning experiences in online and offline classes. The current study used the thematic approach to perform content analysis on the interview data, in terms of class course delivery, interaction, workload, and flexibility. The findings indicated that the online learning environment adopted more flexible schedules, which gave students more opportunities to search questions online immediately in class and self-initiated review after class. Nevertheless, students were more motivated in offline classes as they had more interactions with teachers and classmates and did not experience distractive technical issues in class. In addition to the new language challenges in online classes, lack of oral practice was the primary obstacle for students to improve their English proficiency and understand the content knowledge. The findings could provide CLIL educators with a deeper understanding of students' online learning attitudes and experiences so that they can better plan classes and prepare students to conquer potential learning challenges.

Keywords: online learning, CLIL, COVID-19, high school students, offline learning, teacher

1. Introduction

With COVID-19 spreading over the world, 61 nations in Africa, Asia, Europe, the Middle East, North America, and South America have declared or adopted school and university closures, with most universities enforcing localized closures as of March 13 [2]. All Chinese schools followed the Chinese government requirement for teaching--'nonstop teaching and learning'. Hence, they conducted a blended learning system, which meant to teach students in a combination of online and offline

contexts [3]. In the era of the pandemic, the online learning approach is presently replacing rather than supplementing traditional classroom instruction [4]. It is noticeable that online teaching is emerging as an essential part of the form of teaching [5]. Thus, it is worthwhile to investigate its effectiveness when looking for solutions for changing the teaching paradigm.

The rapid development of the internet creates a space for the prevalence of e-learning in the area of education. Online learning systems are web-based software using the internet to distribute, track, organize and manage the courses [6]. It entails using technological advancements to direct, design, and deliver learning content, as well as to ease communication between teachers and students [7]. For instance, in China, most schools use Tencent or Zoom to conduct online learning. However, even though conducting online classes increase the flexibility both for teachers and students, they are likely to feel lonely, powerless, or nervous, with little time or support to swiftly adjust to an educational modality they have rarely or never seen before [4]. Previous researchers mainly focused on conducting quantitative research to investigate learners' perceptions [8][9], and performance [5]. However, even though they could summarize the general attitudes towards online learning, the quantitative design cannot provide an in-depth study of students' perceptions towards the online learning context. Moreover, O'Dowd [17] mentioned that online learning is still in its way of evolution, which means challenges are still occurring in the process. Nonetheless, scarce research has investigated challenges that students experience in online classes [10], especially for challenges in understanding the content knowledge. Therefore, the current research analyzed reasons for students' perceived obstacles in learning content knowledge during online learning.

CLIL (Content Language Integrated Learning) is an approach that is extensively used in EFL international schools, especially in China. It is an approach for teaching a subject through English as a second language, which has been mushroomed during these few decades Roiha and recognized as the new agent for the development of bilingual education [11] . Former studies have intensively investigated students' perceptions and level of satisfaction towards CLIL [13][14], and provided cutting-edge and success-prone implementation and solutions to better improve classes, especially in Europe [12][16]. Online communication technologies offer enormous promise in CLIL contexts for supporting the development of learners' foreign language abilities and intercultural competency, as well as boosting subject matter knowledge [17]. However, little research has been done in investigating the language challenges in online learning in the CLIL context, especially in China [17].

To bridge the aforementioned gaps, the current study aims to investigate students' perceptions of online and offline learning with the CLIL approach. Also, the study is expected to gain an insight into the properties of online and offline learning. Additionally, students' learning styles will be studied in both contexts. In the psychological aspect, students' attitudes will be recorded to find their relationship with course-related factors. Considering CLIL's significant impacts in promoting language learning, new difficulties encountered in online classes are studied. In this case, a qualitative method is applied to extract individual perceptions towards online and offline classes; hence, to figure out challenges that students encountered. Thereby, further effective adjustment and improvement of online learning can be considered and completed.

This study has twofold aims. It can provide educators a general overview of students' perceptions towards the online learning model to allow retrospect on how to prepare effectively for future classes. Moreover, by illustrating the challenges that students encountered in online learning during the pandemic, the results can be conducive for educators to gain a more comprehensive understanding of how to overcome online learning drawbacks and encourage teachers' and students' engagement.

2. Literature review

2.1. Previous studies of online learning

Pandemic in 2019 raises concerns about the normal operation of face-to-face classes. Hence, most Sino-western joint universities, such as New York University Shanghai and Duke Kunshan University, are two institutions that have successfully adapted and deployed instructional technology products such as Zoom, a video-conferencing platform [18]. Online learning uses web-based software that allows us to distribute, track, and manage courses over the Internet [6], which is often described as self-paced learning [19]. Online lesson is an essential part in response to the pandemic as it is considered as a versatile and robust system that society requires to face uncertain futures [18].

Due to the frequent use of online learning during COVID-19, traditional face-to-face lessons inevitably have to be brought up to make a comparison with online lessons. Thus, one of the arguments that researchers consistently hold is whether offline classes can be replaced by online classes. According to Keis et al [6], participants' views imply that online courses cannot completely replace offline courses in terms of chances for the contact between lecturers and students or between students. Yang and Yang conducted research in the online and CLIL context in China also supported that the offline class is irreplaceable in the future and participants have developed suspicious attitudes towards online classes due to lack of peer pressure, collaboration, concentration, and interaction. On the other hand, Sun indicated that online e-Learning is an alternative to face-to-face education, especially for people who usually use the network to work. Therefore [29], it is noteworthy to compare students' perceptions of online learning and offline learning, especially in China.

Meanwhile, an investigation into the effectiveness and disadvantages of online learning is becoming a prevailing dispute in research. In developing countries, such as Pakistan and China, according to the comments of the interviewees（faculty members and students）, the distant or online education paradigm appears to have more disadvantages than positives [7]; [4]. However, students in developed countries generally have the opposite opinion. For example, in European countries, students consider the e-learning environment to be an effective learning form. As a result, they have favorable views of e-learning environments for educational objectives [20]. In this case, it is worthwhile to further investigate the influence of online learning on Chinese students in detail.

Previous studies of online learning mainly focused on investigating factors affecting students' perceptions and attitudes towards it. Sun have revealed seven essential factors that influence students' perceptions, such as teachers' attitudes, course flexibility, and course quality. Similarly, Paechter and Maier [9] have designed five fields to examine students' attitudes, such as interaction and learning outcomes. In addition, despite the factors examined above, satisfaction, performance，and internet self-efficacy are added into Kuo's [8] study, which illustrated a strong link between the learner-content interaction and students' satisfaction towards online learning. Furthermore, Marjerison investigated the attitudes of students from sino-foreign cooperative universities and typical Chinese universities towards online lessons [26], which concluded that online classes can enhance learners' motivation in both settings. However, investigations related to online learning in terms of students' perceptions encountered in online lessons during the pandemic in the Asian context are scarce [7][21]. Furthermore, most studies focused on online learning in the higher education context [21]. Nevertheless, secondary education has been paid less attention, which is also another gap that should be filled in.

Despite the areas mentioned above, Yang and Chen [10] mentioned in their study the challenges that online activities could bring, especially language challenges in terms of oral skills. However, listening challenges, reading challenges, and writing challenges are not specified in this study. Although students mentioned that flexibility is one feature that makes them advocate online learning,

there is limited research investigating the limitations or challenges when lacking self-regulation in online lessons [9].

Moreover, the research methods applied in researching online learning are quite onefold as most of them adopt the quantitative design. Chang applied the Online Computer Technology Survey (OCTS) and Course Interest Survey (CIS) to investigate students' Internet self-efficacy on learning motivation and performance [28]. Wei and Chou [5] applied the Online learning perception scale (OLPS) and Online learning readiness scale (OLRS). However, little is known about the qualitative design in terms of online lessons' investigation. Qualitative analysis can provide valuable data as it acts as catalysts for in-depth discussion [12]. What's more, as perceptions vary between individuals, the qualitative approach can gain the individual's insight for reasons of students' preferences [14]. Therefore, qualitative data is used for the current exploratory study.

2.2. Previous studies of CLIL

CLIL is described as a dual-focused educational strategy with external language added for both language and content learning [13]. Coyle [12] pointed out the importance of CLIL in language learning, which indicated that CLIL can contribute to students' learning experience by using bilingual instruction. For instance, students were more motivated in CLIL bilingual education, which is also conducive for them to expand their knowledge in English [22]. Similarly, participants had more self-confidence in using English in CLIL classes than non-CLIL classes [23]. Thus, it is clearly shown that the majority of CLIL research has been devoted to investigating the impacts of CLIL on foreign language and mother tongue competence [16][23][25]. Some research discovered that CLIL can have a positive influence on students' language progress. For example, giving students more motivation to learn language and brought a strong English competence, especially in written and oral skills [14]. Students felt that CLIL sessions enhanced their English skills more than ordinary English classes [13]. Moreover, CLIL was found to be more effective in stimulating conversation and dialogue than topics in traditional language textbooks [12]. In addition, Colye's [12] study investigated students' perceptions towards language in CLIL context and found students believed that their oral speaking generally improved. On the other hand, students were not confident in doing writing tasks. Nevertheless, there is a dearth of research that has revealed the language challenges that students might encounter in terms of listening and reading [13]. In this case, language challenges in terms of listening, reading, writing, and speaking will be fully examined in the current study to fill the gap in the field.

Apart from enhancing English language skills, CLIL also aims at advancing content knowledge simultaneously. The influences of CLIL in content learning have also been probed in some research. Oxbrow [23] discovered that students' content knowledge has developed whereas, the participation in CLIL classes tend to reduce as the difficulty of content knowledge constantly increase with the increase in levels of higher education [13]. Therefore, it is necessary to also explore the content knowledge obstacles students might meet within the present study.

The development of CLIL is noticeably seen in the world, but more often in European countries, such as Finland, Sweden, Norway, Estonia, Spain, and Italy [16][23][24]. Meanwhile, the prevailing tendency of the research in studying CLIL also focuses on investigating students' perceptions or attitudes towards CLIL lessons in European countries [13][22][23]. The results implied that participants had more self-confidence and feel interested in the bilingual class [23]. However, the situation in the Asia context is disparate. For instance, a study probing students' perceptions towards CLIL context in Asia implies that CLIL cannot be successfully implemented at the moment in Indonesia, Japan, or China, because there are a number of factors that hampered the successful application of CLIL in the classroom, including a lack of resources, low English teacher competency, and the predominance of traditional teaching approaches [25]. In addition, Oxbrow [23] pointed out

that students' nature perceptions towards the CLIL approach have seldom been investigated. Thereby, it is worth noting to investigate and gain an insight into the students' perceptions in CLIL context in China.

2.3. Previous studies of online and CLIL lessons in China

Investigations into online learning in terms of new barriers during pandemic in Asian, especially in China's context are scare [7][21]. Even though Wei & Chou [5] and Yang & Yang [4] reviewed students' perceptions and experiences in Taiwan, sparse research has been studied in Mainland China. Therefore, the present study prospects to be a groundbreaking study in Mainland China.

In addition, previous research has pointed out that there is a lack of research investigating whether CLIL approach can be successfully implanted in online courses [4]. They suggested that it is necessary for courses and teachers to make a significant change. To be specific, ICLHE teachers require extra pedagogical skills and learners, as well as training in new learning methodologies for distant learning education. Furthermore, Tsagkari has noticed that Chinese students still hesitate about the practicality of CLIL, and students with low English proficiency had more pressure from the high expectations of high English level in taking such courses. In this case, it is significant to investigate whether CLIL can be successfully applied in institutions in China and whether it can promote students' desires for improving their English skills.

Additionally, there is little research that has investigated the effects of COVID-19 on students' perceptions and challenges towards online lessons. COVID-19 brings a new picture of online learning compared with traditional distant learning. For instance, teachers are forced to switch their roles from being a lecturer to promotors in order to enhance self-regulated learning. Thus, teachers have more responsibility to take now, for example, they should be familiar with the platform [4]. As a result, it is remarkable to probe online learning in the era of the pandemic.

Therefore, the following questions were examined in the present study:

- What are the differences between online and offline learning in terms of course delivery, workload, interaction, and flexibility?
- What are the differences between learning styles and learning attitudes in online and offline learning?

3. Research methodology

3.1. Context and participants

The current study was conducted in an international high school in, Tianjin, Mainland China. This school has a total of 4800 Chinese and foreign students. It has been authorized as a Cambridge Assessment International Education (CAIE) examination bureau for almost eight years. Additionally, CAIE has also accredited the school to teach A-Level and IGCSE courses since 2013. After COVID-19 broke out in China, the school took action to change face-to-face lessons to a blended teaching system, which encompassed online and offline classes. Student's ages ranged from sixteen to nineteen and they were all EFL students.

The study was carried out in summer 2021. Six participants from TYCIS were selected using convenience sampling to join the interview process, to be specific two males and females. Their gender, ages, grades, and online class duration were summarized in Table 1 below. The participants were from three grades of high school. Because this exploratory study mainly aimed to investigate individuals' attitudes towards online learning in-depth, therefore, small sample size was used to gain an insight into the research topic to provide empirical evidence and perspectives for further research.

Table 1: Participants' information.

Participants	Gender	Ages	Grades	Online classes duration
J	Female	17	Year 11	One and a half semester (Year 10: only the second semester 280h; Year 11: the whole semester 240h with the first semester 120h and the second semester 120h respectively)
G	Male	19	Year 12	Two semesters (Year 12: the first semester 80h and the second semester 80h)
E	Female	17	Year 11	One and a half semester (Year 10: only the second semester: only the second semester 290h; Year 11: the whole semester 208h with the first semester 116h and the second semester 92h respectively)
D	Female	19	Year 13	One semester (Only in Year 13: 265h)
K	Male	18	Year 12	One and a half semester (Year 11: only the second semester: only the second semester 240h; Year 12: the whole semester 310h with the first semester 170h and the second semester 140h respectively)
T	Female	17	Year 11	One and a half semester (Year 10: only the second semester: only the second semester 150h; Year 11: the whole semester 308h with the first semester 168h and the second semester 140h respectively)

3.2. Context and participants

This exploratory study adopted a qualitative design using the interview as the data collection method. The online semi-structured interview was conducted to give participants opportunities to retrospect their experiences. It was conducted in a one-on-one form at the platform of the Tencent meeting. All interviewees were provided with an informed consent notice of having their video interview audio-recorded. They were also informed that the data would only be used for research purposes and their anonymity would be protected. The interviewer and participant turned on their camera during the meeting. Each interview was at least sixty minutes long and the conversation went along in Chinese.

   The interview protocol was piloted with two female students before being finalized to enhance its reliability. These two participants were both EFL learners and had experience studying in online and CLIL contexts in the international education system. After the piloting, the original research questions were adjusted by dividing them into several smaller questions to reduce the length of each question. The interview protocol follows three main themes: (a) the difference between online and offline learning (course progress, workload, interaction, and flexibility); (b) the difference in learning style and learning attitudes towards online and offline learning;(c) new challenges occurred in online lessons in terms of language (listening, reading, speaking and writing), content knowledge and teachers' body languages and facial expressions. After the interview, an Excel sheet that summarized their answers during the interview was sent back to each participant to let participants check whether there was anything to complement or amend. This double-check procedure reduces the subjectivity of researcher's interpretation of interview data.

3.3. Coding & Data analysis

After the completion of all interviews, the researcher played the recording and transcribed Descriptive words in participants' responses that might be conducive for the coding process. Then, the transcribed data were translated from Chinese into English. After that, the data were coded twice with the

thematic approach. The purpose of initial coding is to explore individual perceptions. Therefore, the initial codes were derived from each interviewee's responses; hence, participants' descriptive responses took a great proportion of the initial codes. The data summarized individual differences and each participants' behavioural and perceived pattern during online learning has been specifically derived. The second-round codes were the summary of the initial codes. It grouped individual differences into shared behaviours and perceptions, and each different pattern was summarized under different themes. Thus, the second-round codes provided a general pattern or similarities of participants' perceptions.

One example of the two levels of codes has been shown below (Table2). The coding process was carried out by one researcher, but the codes were double-checked by another experienced researcher in the field to guarantee the accuracy of the data analysis process.

Table 2: New language challenges(listening) in online lessons.

Participants	Research question: What are the new language challenges that you encounter, for instance, in terms of listening during online lessons?	
	Initial coding	Second-rounded coding
J	The teacher speaks too fast Difficult to understand the content	Common perceptions: Most students cannot follow teachers' teaching progress Some possible issues are technical issue, teachers' talking speed and insufficient explanation of hard questions
G	Cannot hear the teacher's talking clearly	
E	/	
D	Teacher didn't give enough explanations of the knowledge Problems understanding the course content Concentration will be affected Mistakes occur in the homework	Special behaviors: K couldn't understand some proper nouns Subtitles can enhance his understanding of the content knowledge
K	Cannot understand proper nouns	

4.   Results

4.1.   Difference in course delivery

The research questions involved four aspects for participants to illustrate their own opinions towards the difference between online and offline learning. The four themes are course delivery, degree of interaction, workload, and flexibility. Therefore, the results of each theme are presented in order.

4.1.1. course delivery

In terms of course delivery, six participants' answers were ambivalent. Two of them found online learning proceeded faster than offline learning because teachers were not that familiar with the new mode of teaching style, so they would spend some time adjusting the device at the beginning of the lesson, whereas the other two interviewees illustrated a completely opposite idea. They felt that course delivery in online lessons was far beyond offline lessons.

4.1.2. Interaction

The interaction between teacher and students or within students was generally low in the online context. Most of the participants thought the interpersonal distance between teachers and their classmates to be longer in online classes because teachers would focus on sharing the slides rather than communicating with students. In addition, one of the participants reckoned a reduced frequency

of interaction in online lessons. He clearly felt the platform, such as Zoom or Microsoft Teams constrained the possibility of allowing students to communicate with classmates privately unless the teacher opened the discussion. Therefore, online learning was believed to be weakly focused. Moreover, most students found that the teacher's reply to messages in online courses was not as efficient as answering questions in offline classes, which interfered with their understanding of the content knowledge in time and hence, affected their quality of studying.

Meanwhile, offline learning was also considered by participant E to be a good chance for him to improve his communication skills because he would ask teachers questions in person whenever he could, which can increase the efficiency of solving problems. For instance, he could directly approach subject teachers in teachers' office after offline classes if he needed help. However, he always felt bored and frustrated to ask teachers in online classes because there was 'jet lag' between his teachers and himself, which means the time for reply was longer than in offline classes.

In contrast, according to participants' experiences in offline courses, the interaction and communication between students would be more frequent than online, and the sense of interaction, immersion, and intimacy would be stronger, which could help them better enhance their understanding and memory of the knowledge. However, Interviewee G provided a noteworthy opposite statement favouring the online classes: "Online classes are more meaningful than offline activities because online classes have less pre-course warm-up activities, such as doing some games that have nothing to do with the course content like 'hangman'. Online classes reduce these similar activities because teachers are aware it is difficult to let all students interact with each other in online learning context, thus, the teacher will focus directly on the content itself." His response suggested that the activities before the lessons may sometimes not be related to the content knowledge itself, thus, this type of interaction may distract the normal course delivery.

4.1.3. Workload

Most participants mentioned the workload in the online context outweighed face-to-face courses. Interviewee K explained this phenomenon by stating that teachers may don't know students' mastery of knowledge because of the feature of online learning. In other words, teachers could not immediately find out which part of the content confuses students. In this case, the workload was a good factor for teachers to assess and improve their teaching quality. However, this also reflected that one of the common features of online learning was that both sides cannot communicate promptly.

4.1.4. Flexibility

The level of flexibility that participants experienced in both learning environments were also diverse. Participants reckoned that online context had much higher a level of flexibility as teachers or students could attend online classes from anywhere. Inversely, participants all agreed that the classroom discipline was more rigorous in offline classes because students would feel more intimidated by the teachers' supervision. It was also noticeable that one of the participants reviewed that an online learning environment could provide students more space for independent thinking, on account of a more flexible environment in online lessons.

4.1.5. Other differences between online and offline classes

Despite various kinds of differences above, other differences were also noticed. First, teaching quality was believed to be much higher in offline settings and the in-class feedback and homework feedback are more specific and detailed. Students observed that teachers were more likely to provide more suggestions about their homework in offline classes because students usually submitted hand-written homework there. Teachers were more likely to comment on the paper when they wanted to refer to a

specific sentence, whereas in online classes, students submitted their homework as documents; Therefore, teachers would have trouble writing comments when they tried to locate a specific problem. As a result, feedback would become more specific and clearer in offline lessons. Another difference that draws the researcher's attention was related to concentration. Interviewee T revealed that staring at the computer screen for long periods discouraged her from concentrating on the class as her eyes would feel sore.

4.2. Differences in learning style and learning attitudes

4.2.1. Learning style

The learning style varies from person to person, but a shared learning styles were identified in online classes. As participant T suggested, "I would like to directly search and add conducive information related to the course content by myself if I have to conquer some subject problems… It is quite hard to approach teachers individually during online learning because they will end the meeting after the class. We can't get their messages back immediately. Unlike offline classes, we can directly find teachers in their offices and ask questions face-to-face." In line with other participants, they also stated if they couldn't receive the same quality of teaching as in the offline classes, e.g. low rate of interaction between teachers and students and incomprehension of the subject knowledge, they would be self-directed to look for possible solutions. Additionally, most students would take screenshots of teachers' presentations and they would usually watch the recordings of online courses, which were believed to be conducive for revisions. And the frequency of previewing course content was much higher in the online learning environment. As participant T suggested, " there will be ineffective communication or network barriers during online courses, I cannot enjoy the same quality assurance as offline classes. Therefore, preview in advance can avoid such problems." It could be seen that students would not allow themselves to be interfered by the faster course delivery or the unsatisfactory quality of teaching during online learning. Instead, they would actively preview the course to catch up. Also, it was interesting to note that one participant showed the preference of using subtitles in order to better understand the content knowledge.

However, in an offline context, students would give priority to following the teacher's pace, relying more on the teacher's interaction, and asking the teacher questions if feeling confused. Most participants wouldn't take notes during the offline classes because they thought the interaction between teachers and students was sufficient for memorization to happen implicitly.

4.2.2. Learning attitudes

Learning attitudes of participant in online classes were similar. All participants perceived themselves to be more slothful in the online environment than in offline classes. This was both because teachers could not see straight students' behaviors and students were unable to compare the progress with their peers. As participant K reviewed, "It is hard to see and compare the learning progress between my friends and myself in online learning context. Sometimes I feel very exhausted. And I can not feel that I am encased by a sense of peer pressure, that's why I am demotivated to learn." In this case, since they could not feel the learning behaves and efforts, they didn't have the motivation to learn.

Nevertheless, the offline classroom has a more conducive atmosphere for studying, with everyone in a shared space and a more fixed schedule, which can raise a stronger learning initiative. Hence, students will be affected by peer pressure from their classmates and worked harder.

4.3. New challenges in online courses

4.3.1. Languages challenges

Some of the participants found it was difficult to understand some of the proper nouns regarding the course, for instance, some mathematical proper nouns, such as 'integration' and 'partial fraction', which demotivated their learning incentives. But this is a common difficulty in CLIL context which is not particular to online learning.

Students also came across speaking difficulties as the opportunities for communication noticeably reduced in online classes. Most of the participants discovered that they had less chance to practice their communication skills.

There were not many difficulties reflected in terms of reading in the online context. However, the common difference between online and offline classes on reading was the form of materials. Most of the students were more accustomed to reading the hard copy rather than the electronic version because the paper version was considered to be more visually friendly.

Writing challenges is also a considerable factor in CLIL courses. However, new challenges were rarely found in writing. In contrast, participants of online courses felt their writing capacity and proficiency actually increased compared with offline lessons. They discovered that the frequency of writing emails became much higher, which lead to better proficiency as students were provided more practicing opportunities in writing informal writings. Thus, it was conducive for their daily communication with foreigners. However, this was not always an easy task. Interviewee T encountered difficulties in writing word combinations or sentences. On the other hand, E stated that her writing skills retrogressed after she started writing online because the computer could automatically correct misspellings, Therefore, she would forget the form of words when taking a paper test.

4.3.2. content comprehension

Although shared challenges were not discovered at this stage, some participants' individual experiences could also be highlighted. Participant E thought teachers reduced the frequency of emphasizing key terms in class, which discouraged his memorization of ?. In addition, K mentioned that teachers in an online context would only pay more attention to swift course delivery would rather not to add extra materials to give students a more comprehensive grasp of content. Despite traditional causes that led to content comprehension difficulties, technical issues also blocked some students' normal routine of understanding the knowledge. As raised by Interviewee X, "Our teachers are quite unfamiliar with the technical resources, such as the platform, which wasted plenty of class time in adjusting the platform." Therefore, online courses brought new content comprehension difficulties to students.

4.3.3. body expressions

Facial and body expressions played an essential role in enhancing students' concentration in class. According to participants' feedback, the teacher could neither see the students' body movements and facial expressions nor have eye contact. Therefore, without these clues, students believed their teachers could not have direct feedback from students on their mastery of knowledge in online learning. Moreover, in this situation, participants' desires for interaction will be reduced, which means both sides become less motivated. Furthermore, students recalled that sometimes due to technical issues, their teachers' body expressions are frozen in front of the camera. "I would be really immersed in the class if teachers have exaggerated facial expressions or body language." (Interviewee x) Students might feel bored if they sit in front of the screen for a long time without interacting with

their teachers, but it was conducive to catching students' attention back if teachers could enlarge their facial expressions and body language. As summarized by an interviewee, "I would be willing to participate in the class if the teacher show his enthusiasm for teaching the lesson to me. This is because I could feel more emotions existing in the class instead of just looking at the PowerPoint."

5. Discussion

With respect to the difference between online and offline learning, the results, in general, indicated that there are significant differences between them. In line with Yang and Chen's study, the present study illustrated that online interaction between teachers and students is quite sparse. Teachers would put their attention mostly on presenting the slides rather than asking students to solve questions. Therefore, it is hard for teachers to know whether students understand the point or not. Consequently, the frequency of communication between them is reduced in online courses, which might cause students difficulties in understanding the course content. Regarding to the speed of course delivery, it was found that participants who felt the online classes proceeded slower than offline classes was because the teachers were not that familiar with the learning platform as they needed sufficient time to adopt this new form of teaching, for instance, adjusting the white board and learn the manner for presenting the PowerPoint to students online. All these require time, which might slow down the speed of course delivery. This belief is echoed by [4], the study suggested that teachers should be provided with knowledge and literate in information technology (IT) so that they can fully operate the platforms online.

Similarly, regarding the second research question, generally, participants favoured online learning less. Contrastry with the findings of Marjerison，who conducted a quantitative design and discovered that students were almost showed their positive attitudes towards online learning. However, Marjerison also suggested that one of the limitations of the study was the absence of qualitative design. They failed to explore students' perceptions and attitudes towards online learning in the study, which was hard to find out deep-seated reasons regarding why students overall preferred online classes. Thus, it was suggested that it would be conducive and essential to sufficiently explore deeper reasons behind students' attitudes and perceptions. Therefore, differing from previous quantitative experiments, the current study committed itself to giving participants opportunities to explain their opinions towards online learning. As mentioned above, participants in the current study were found to have less fondness in online classes. Participants K gave his perspective, "I felt less motivated in online setting. This might be because everyone at home is hard to compare their own progress with classmates. I need to have some peer pressure so that I can be more motivated to learn, but staying at home without interacting with teachers and classmates face-to-face give me a consciousness that learning become not as interesting as before."

However, based on the findings of similar studies, a more plausible explanation is that students can be distracted from irrelevant websites or videos in online courses [4]. As a result, students might have a sense of boredom. This provides implications for teachers of online courses in that it is essential to introspect how to catch students' attention and reduce their stress, as well as to encourage their motivation and initiatives towards online learning.

In addition to the third research question, our data were consistent with [5], who mentioned that facial expressions and body languages were vital teaching tools, while when the form of teaching transformed into online learning, facial expressions and body languages were restricted to the fixed screens. Interestingly, participants in the present study considered teachers' body language and facial expressions as one of the critical factors that might influence their concentration in the classes. The initiatives between teachers and students both declined because they both cannot see each other's facial expressions and body language. Students were found to have a deeper impression of content knowledge when teachers extend their arms (Tai, 2014). Nevertheless, online platforms fixed

teachers' movement only onto a small screen. Thereby, students were passive about online courses since they couldn't fully sense teachers' emotions. In addition, these findings have important implications for teachers. They should maximize their facial expressions and body language to enable students to be better immersed in the class.

In this study, we also explore students' new challenges in terms of language challenges during online learning for the first time. We examined four aspects(listening, reading, writing, and speaking) altogether to grasp a more comprehensive understanding of how did students' language abilities changed from offline classes to online classes. The major challenges occurred in speaking. "It is hard for us to practice our oral speaking in online classes because teachers are more likely to give lecture-style classes rather than interacting with us." Similarly, Yang and Yang found that students hold skeptical attitudes towards online learning because of the lack of interaction and communication during online lessons [4]. Together, the present finding confirmed that students desired to communicate, but the opportunities for them to speak became less. Therefore, the study provided a new insight into online learning, which can encourage teachers to rearrange the online learning mode in order to provide more speaking opportunities for students.

Despite its exploratory nature, the current study offers some insight into CLIL implications in China, which revealed some of its advantages. As proof, students showed their desire of using English to communicate, which can practice their English skills. However, unlike European countries [9][29], they illustrated students were satisfied with online learning in some aspects, whereas the current study found students were not adapted well to online learning. The reason behind it was complicated, not only involved with the participation of CLIL approach but also related with teachers' adaptedness to online learning, and the teaching platform. Thus, it can be proved that face-to-face lessons at least would not be replaced by online classes completely [4]. Further research can be devoted to investigating the practicability of the combination of CLIL and online lessons.

6. Conclusion

This study is primarily intended to investigate international high school students' perceptions and attitudes towards online learning with the interaction of CLIL approach during the pandemic. The qualitative design has addressed three questions, including the difference between online and offline learning, the online learning styles and learning attitudes, and the new challenges in terms of language (listening, reading, writing, and speaking), content knowledge, facial expression, and body languages. The most obvious finding to emerge from the study is that students didn't adopt the new mode of teaching-online learning completely. They expressed their reasons with hesitant attitudes towards online learning. The main causes for that might be the lack of interaction and communication between teachers and students, technical issues, and lack of supervision from teachers. Therefore, the findings reported here shed new light on new challenges that occurred in online learning, which is different from challenges in offline learning. Particularly, the findings answered the original objectives, which illustrated new challenges that appeared in listening and reading in online courses. This adds substantially to our understanding of how students' language ability is affected by the CLIL approach, especially in China.

Suggestions of further implications on reforming the mode of online learning, especially, in terms of interaction between teachers and students might become the priority of promoting the sustainable development of online learning since online learning can be a substitute for offline teaching in the long run [4]. Therefore, to drive the continuous evolution of online learning, the teaching pattern needed to be adjusted. First, the findings suggested teachers should not only focus on illustrating the content knowledge, but also give students opportunities to further their understanding of the subject knowledge like speaking out their opinions of the knowledge and interacting with their colleagues. Furthermore, technical issues and unfamiliarity of technical resources are two of the new challenges

that occurred in online classes, which disturbed the speed of course delivery. Therefore, there is, definite a need for teachers to transform their roles not only to become facilitators to motivate students to grab knowledge but also intermediates to become familiar with the online learning platforms and be ready to deal with technological issues [4].

Additionally, analyzing the difference between offline learning and online learning, has extended our knowledge of the practicability of online learning when an emergency came, for instance, the COVID-19. The current study provides an exploratory insight into the online and CLIL classes in the Asian context and suggested that students held the belief that offline learning cannot be replaced by online learning. While the debate regarding offline and online learning has never stopped, European countries have provided different perspectives. Thereby, if the debate is to be moved forward, a better understanding of CLIL in the cross-national situation should be considerably developed.

The primary limitation of the current study is the sample size. Therefore, more participants from different schools with different cultures can be invited in further research…. Moreover, as the learning process is studied in the current study, it is also important to investigate teachers' opinions towards online and offline learning because they are also stakeholders in this educational context. Since listening, reading, speaking, and writing is four fundamental skills of online learning, it is necessary to first explore these four factors to gain an insight into students' basic language challenges as in the current study. However, future research could extend the perspectives of studying language in online courses, such as investigating students' perceived new challenges in vocabulary and grammar to further understand students' language-related challenges.

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