บทความวิจัย (Research Article)

Journal of Digital Education and Learning Engineering

ดำเนินการวารสารโดย สมาคมการศึกษาดิจิทัลและวิศวกรรมการเรียนรู้

The Investigation of First-year University CFL learners' Phonological Beliefs, Self-regulated Online Learning, and Online Learning Satisfaction: A Case Study of Mae Fah Luang University, Thailand

Fang Yuan*

School of Sinology, Mae Fah Luang University, Thailand

Received: August 7, 2024 Revised: September 15, 2024 Accepted: September 22, 2024

Abstract

In a blended learning environment, this study aimed to investigate the relationship among Mae Fah Luang University first-year CFL learners' phonological beliefs, self-regulated online learning, and online learning satisfaction in Thai context. This research is quantitative research, the researcher applied the descriptive analysis to interpret the data results, while path analysis applied to examine the relationships. The findings emphasize the importance of addressing learners' phonological beliefs and highlight the value of pronunciation instruction in blended CFL courses. By integrating pronunciation-focused activities and fostering positive beliefs, instructors can enhance learners' engagement and overall satisfaction. Secondly, the study underscores the need to promote self-regulated learning skills among CFL learners. Providing explicit instruction on goal setting, time management, and metacognitive strategies can empower learners' autonomy. Additionally, the identification of preferred pronunciation learning strategies and the significance of time management skills contribute to the design of effective blended CFL courses. The relevant pedagogical implications are also discussed. First, teachers are encouraged to raise students' phonological awareness and help them realize the importance of Chinese pronunciation. Appropriated learner beliefs are crucial for sustaining motivated foreign language learning. Second, to enhance learners' experience in a blended learning environment, instructors may consider effective instructional methods, such as explicit explanation of Chinese pronunciation, providing timely feedback and employing situation dialogues to improve learners' speaking skills. Third, the instructors may design online learning activities to promote learners' using cognitive learning strategies, and foster self-regulated learning skills. Fourth, instructors may create a supportive and non-judgmental learning environment to encourage learners to address their learning difficulties and seek help. Lastly, the research revealed the significance of time management skills in blended CFL learning. This emphasizes the importance of providing learners with resources and strategies to improve their learning autonomy, leading to more positive learning experiences.

*Corresponding author

Email address: fang.yua@mfu.ac.th

Keywords: Blended learning, phonological beliefs, self-regulated online learning, online learning satisfaction

■ Introduction

Mae Fah Luang University (MFU) implemented blended learning to address the challenge of education and health during the COVID-19 pandemic. This education model, known as 'blended learning', has continued to be applied at MFU even after the pandemic. "Sound System of Chinese Mandarin" is the compulsory course for first-year learning Chinese as a foreign language (CFL) student at the School of Sinology, Mae Fah Luang University. In the majority of blended foreign language learning scenarios, students acquire linguistic knowledge while also practicing their online listening and reading abilities. Face-to-Face (FTF) meetings with teachers primarily focus on developing speaking abilities, which students acquire through interactions with their peers and the instructor while completing meaningful tasks (Zhang, 2019). These FTF meetings and the online component are interconnected; typically, FTF practice builds upon the foundations laid by the online learning component. This approach is increasingly popular as a teaching and learning language strategy. Blended learning approach provides a flexibility learning platform, enhances access and effectiveness, fosters more interactions in the classroom, improves four language skills (listening, speaking, reading and writing) and promotes learners' motivation, achievements and learning autonomy (Albiladi & Alshareef, 2019; Banditvilai, 2016; Chen et al., 2022; Liu & Yu, 2012)

Before meeting the teacher in person, students enrolled in the 'Sound System of Mandarin Chinese' are required to study each learning unit instructional videos on Moodle (LMS). To ensure comprehension, students are allowed to take an online pretest before engaging in online listening tasks for each learning unit. Then in the FTF classroom setting, instructors design various learning activities for students, including reading Chinese syllables aloud, distinguishing pronunciations, and engaging in conversations with peers. And instructors also provide accurate pronunciation guidance and feedback. To enhance their pronunciation skills, students are required to complete additional online listening and speaking assignments via LMS after the face-to-face class. Instructors provide feedback through four oral tests.

According to the literature, foreign language learners' beliefs are likely to influence their learning behaviors (Nushi et al., 2019; Simon & Taverniers, 2011). The investigation of learners' beliefs about foreign language pronunciation in different cultural contexts can increase awareness among all individuals involved in the teaching and learning process and influence pedagogical practices (Celce-Murcia et al., 2010, p.279). Self-regulated learning ability plays a crucial role in understanding the psychology of foreign language learners and aids in the management of strategic learning (Weinstein et al., 2011). Different foreign language courses, focusing on different language skills, may result in learners' various SRL behaviors (Duncan & McKeachie, 2005). And within the blended learning environment, learners' self-regulated online learning becomes a key component of their academic achievement (Barnard-Brak et al., 2010; Lehmann et al., 2014). Another aspect to take into account in the blended learning environment is learners' learning satisfaction. Learners' attitudes, perceptions, and expectations regarding a certain learning style are referred to as learner

satisfaction systems (Wu et al., 2010). The level of learners' satisfaction with blended learning was a key factor in determining how well it was adopted. As a result, understanding students' learning satisfaction help instructors develop successful learning (Chen & Yao, 2016). From the literature review, most research focuses on English as a foreign language learner, with few studies on Thai CFL learners (Cui, 2014; Fan & Tian, 2024; Xu et al., 2022; Yang & Medwell, 2017; Zhang, 2019). Therefore, this study aimed to investigate the relationship among MFU first-year CFL learners' phonological beliefs, self-regulated online learning, and online learning satisfaction in Thai context.

■ Research Questions

This study aims to investigate first-year CFL learners' phonological beliefs, self-regulated online learning and satisfaction with online learning activities at Mae Fah Luang University (MFU). The research questions are:

1. What are the phonological beliefs of first-year CFL learners' at MFU?
2. What self-regulated online learning practices do first-year CFL learners' at MFU engage in?
3. How satisfied first-year CFL learners' at MFU satisfaction with online learning activities?
4. What are the relationships among the phonological beliefs, self-regulated online learning, and online learning satisfaction of first-year CFL learners at MFU?

■ Significance and Purposes

The analysis of the literature indicates that there is little research on CFL (Chinese as a Foreign Language) learners' phonological beliefs, self-regulated online learning, and online learning satisfaction in the university level Thai educational context (Cui, 2014; Fan & Tian, 2024; Xu et al., 2022; Yang & Medwell, 2017; Zhang, 2019). This research gap underscores the significance and potential purposes of conducting a study in this area.

1) By comprehending CFL learners' phonological beliefs, instructors can design targeted interventions to enhance pronunciation learning strategies.

2) Investigating self-regulation in online learning among CFL learners helps identify strategies that promote effective self-directed learning in an online environment.

3) Exploring factors contributing to online learning satisfaction among CFL learners allows institutions to enhance learners' learning experiences.

4) Conducting this research within the Thai university level CFL educational context provides specific insights into the relationships among phonological beliefs, self-regulated online learning, and online learning satisfaction. Understanding how these factors intersect can help instructors design courses that better align with learners' needs and challenges.

■ Literature Reviews

Foreign language learners' phonological beliefs

Learners' beliefs about foreign languages are "based on experience and the opinions of respected others, which influence the way they act" (Wenden, 1986). Therefore, learners' beliefs are likely to influence their learning behaviors (Nushi et al., 2019). The research on learner beliefs of foreign language pronunciation, according to the literature review, can be divided into: (1) learners' concepts of the significance of learning foreign language pronunciation, self-pronunciation, and challenges (Cenoz & Lecumberri, 1999; Nguyen, 2019). (2) perspectives on foreign language pronunciation instruction (Alghazo, 2015; Couper, 2003.); (3) views on native speaker instructors versus non-native speakers of instructors the language (Alghazo, 2015; Yokomoto, 2014) and (4) preferred pronunciation learning strategies (Yokomoto, 2014); (5) views on teaching foreign language pronunciation (Nushi et al., 2019; Simon & Taverniers, 2011)

Wenden (2002) argues that foreign language learners' beliefs have been a neglected variable. Therefore, the purpose to examine and understand the learners' beliefs about foreign language pronunciation in different context can help instructors to understand learners learning pronunciation better and design foreign language pronunciation courses well (Nguyen, 2019).

Foreign language learners' self-regulated online learning

Self-regulated learning (SRL) is defined as "an active, constructive process where learners set learning goals and then try to monitor, regulate, and control their cognition, motivation, and behavior, guided and constrained by their goals and the contextual features of the environment" (Pintrich, 2000, P453). Self-regulated learning ability plays an important role in understanding the psychology of foreign language learners and aids in the management of strategic learning (Weinstein et al., 2011). According to foreign language educational psychologists, self-regulated learning in the field of foreign language acquisition is defined as "the self-directive processes that language learners use to activate and maintain cognition, emotions, and behaviors in order to attain their academic goals in foreign language learning" (Zheng et al., 2018). And with the education technology development, self-regulated learning becomes a crucial component for success in an online learning environment (Barnard et al., 2009). Self-regulation affects people's foreign language online learning practices and efficacy, therefore, it is important to develop self-regulation skills for online foreign language learners (Lin et al. 2021).

Online learners' self-regulation may develop into a construct made up of various variables given the stark contrasts between the traditional classroom-based learning environment and the blended learning environment. A specific tool was developed by Barnard et al. (2009) to assess students' online self-regulated learning. Goal setting, time management, learning environment structuring, help seeking, task strategies and self-evaluation are the six factors that make up this questionnaire. Based on Barnard et al. (2009)'s theoretical framework, Zheng et al. (2016) designed a questionnaire for measuring English language learners' online self-regulation, exhibiting a similar factorial structure. Zhang (2019) studied 19 CFL learners at a U.S.

university using self-regulated learning in a blended learning context over one semester. The findings indicated that students struggled with a variety of learning issues, and they would gain by exposure to and incorporation of SRL strategies. The skills they most required assistance with were goal setting, making a strategy to reach the goal, and using various time management and learning management strategies. Lin et al. (2021) explored online self-regulated learning profiles of 378 international students who enrolled in online Chinese language courses. The study supports the context-bound nature of SRL and calls for developing adaptive training programs according to SRL profiles of Chinese language learners.

Studying SRL in foreign language online learning is critical for understanding foreign language learners' psychological, cognitive, and behavioral processes, as well as assisting learners in improving their foreign language level and autonomous learning ability through the use of online learning resources and tools.

Foreign language learners' online learning satisfaction

Learning satisfaction is how learners feel and view the learning process as a result of their desire to learn and their learning experiences (Topala & Tomozii, 2014). According to Şahin (2017), information communication technology (ICT) promotes self-regulated learning and enhances students' motivation, satisfaction and language proficiency more than traditional classroom learning.

There are many factors that define online learning satisfaction for students. In this study, the researcher used Chapelle's evaluation criteria to measure the online learning satisfaction of MFU CFL learners (Chapelle, 2001). Chapelle's evaluation criteria evaluation is widely used in design, development, and assessment of computer-assisted language learning (CALL) programs. The criteria include: (1) Language learning potential: this refers to the capability of CALL to provide learners useful instructions. (2) Learner fit: this refers to how well the resource may be used to meet the needs and learning preferences of students with a wide range of abilities. This covers how students can organize and keep track of their education in order to assess understanding and development. (3) Meaning focus: This is the degree to which learners are pulled to the meaning, which can affect their interest, motivation, and success. (4) Authenticity: This refers to how well the resource's language learning activities support effective participation in social practice. It also includes its ability to support active and self-regulated learning and build on the learner's existing knowledge. (5) Positive impact: These measures how much a computer learning application's activities improve students' speaking, listening, reading, and writing abilities. (6) Practicality: This refers to how well the resource's activities promote language acquisition.

The relationship among the foreign language learners' phonological beliefs, online learning satisfaction and self-regulated learning

There are some studies have explored the relationship between foreign language learners' beliefs and self-regulated online learning. Zheng et al. (2018) found that a positive future image of language learning and intrinsic interest in the target language can enhance self-regulation. Similarly, Wang and Zhan (2020) identified a positive relationship between learner beliefs and self-regulation, with motivation acting

as a mediator. Moyer (2014) highlighted the importance of learner engagement and self-regulation in achieving exceptional outcomes in foreign language phonology. Therefore, it can be inferred that foreign language learners' phonological beliefs are likely to be related to their self-regulated learning.

The proposed connection between self-regulated learning and satisfaction with online learning has been investigated by previous researchers. Due to the increased accountability, flexibility, and autonomy provided by blended learning environments, self-regulation becomes a crucial component of online learning success (Barnard et al., 2009). Learning achievement increases when students develop stronger SRL abilities, as they are more likely to experience greater course satisfaction (Barnard-Brak et al., 2010; Brandmo & Berger, 2013). Similar to this, studies have noted that less self-controlled students may abuse the flexibility provided in the blended learning environment, which lowers their level of learning satisfaction and decreases their likelihood of learning success (Lee et al., 2008). In the delivery of online teaching for blended learning courses, SRL is a crucial component for creating successful learning experiences for learners (Broadbent & Poon, 2015). In general, when learners can engage in more online self-regulated learning activities, they will have a positive opinion of blended courses. This is due to the fact that during online instruction, learners exercise more independence and responsibility for their learning. They will study more satisfyingly and have a better chance of succeeding in blended learning courses when they learn how to control various learning strategies in their learning process. These assertions are supported by a study by Rowe and Rafferty (2013), which found that students with a high propensity for self-regulated learning may find blended courses to be more satisfying.

■ Methods

This study employs a quantitative research design. The research examines the following dimensions: (1) the foreign language phonological beliefs of MFU first-year CFL learners; (2) their self-regulated online learning strategies; (3) their satisfaction with online learning activities, and (4) the relationships among their phonological beliefs, self-regulated online learning strategies, and online learning satisfaction.

Participants

There were 334 first-year university CFL students enrolled in the Sound System of Chinese Mandarin course during the first semester of 2022 at Mae Fah Luang University. At the end of the semester, 334 questionnaires were distributed via Google Form to inform the students and encourage their participation. A total of 250 valid questionnaires were received. The demographic data reveals that 30 respondents are male and 220 are female. The average age of the university first-year students is 18.76 years, and the average number of years they have been learning Chinese is 5.33 years.

Instruments and Data Collection

The questionnaire includes 4 sections: (1) learners' basic information, age, gender, contact information;(2) the beliefs about CFL pronunciation; (3) self-regulated online learning; (4) learning satisfaction with LMS online listening and activities. The questionnaires are based on 5 Likert scales ranging from 1(strongly disagree) to 5 (strongly agree).

The phonological beliefs (PHB) section includes 24 items. The researcher adopted items from Yokomoto (2014), Nushi et al. (2019) and Nguyen (2019). This section consists of 24 items with 4 subscales: (1)3 items (AIP1-3) for awareness of importance of learning CFL pronunciation (2) 4 items (ASP 1-4) for awareness of self-pronunciation; (3)7 items (ATI 1-7) for attitudes toward pronunciation instruction; (4) 5 items (PEP 1-5) for perceptions of foreign language pronunciation instruction; (5) 5 items (PPL 1-5) for preferred pronunciation learning strategies.

The learners' self-regulation online learning (SRL) section includes 27 items. The researcher adopted from the measurement developed by Barnard et al.(2009). This section consists of 27 items with 6 subscales: (1)5 items (GS 1-5) for goal setting; (2) 3 items (ES 1-3) for environment structuring; (3) 8 items (TLS 1-8) for online learning task strategies; (4) 5 items (TM 1-5) for time management; (5) 2 items (HS 1-2) for help seeking; (6) 4 items (SE1-4) for self-evaluation.

The fourth section includes 10 items that measure learners' satisfaction with online learning activities (SAT). The items are based on Chapelle's principles for the evaluation of computer-assisted language learning programs (Chapelle, 2001). This section consists of 10 items with 3 subscales: (1)4 items (PI 1-4) for positive impact; (2) 4 items (MF 1-4) for meaning focus; (3) 2 items (LF 1-2) for learner fits.

All the questions in the questionnaire are originally in English and have been translated into Thai. Two Thai instructors have confirmed the correctness of the translation, so there is no barrier for respondents to understand and answer. 334 questionnaires were distributed via Google Form to inform the learners to participate. 250 valid questionnaires were received.

Analysis of Data

The researcher employed descriptive analysis to explore research questions 1-3, which investigated MFU first-year CFL learners' phonological beliefs, their self-regulated online learning, and satisfaction with online learning activities.

The items in the questionnaires were analyzed for its reliability and validity by using software WarpPLS 8.0. Churchill and Iacobucci (2005) proposed standard levels for measurement of reliability and validity: Cronbach's alphas 0.7, composite reliability 0.6, and the average variances extracted (AVE) 0.5 are considered as acceptable. Table 1 shows the final values of reliability, validity and measurement invariance test. The reliability values are higher than the standard value; therefore, the reliability and validity are qualified.

Table 1.

Standardized Loadings and Reliability Measures Constructs

Construct	Mean	SD	AVEs	Cronbach's alpha	Composite Reliability
PHB	3.92	1.09	0.50	0.93	0.92
SRL	3.73	0.92	0.53	0.92	0.93
SAT	3.91	0.83	0.54	0.91	0.92

To answer research question 4 (the relationships among MFU first-year CFL learners' phonological beliefs, self-regulated online learning, and satisfaction with online learning activities), the researcher applied WarpPLS 8.0 software to do data analysis. WarpPLS 8.0 can conduct a structural equation modelling (SEM) analysis by using composite-based method, factor-based method and "warped" partial least square (PLS) method. PLS-SEM was selected because it has certain advantages. Firstly, PLS-SEM could handle both formative and reflective indicators for latent variables; secondly, it requires minimum measurement scales; thirdly, it is capable of handling small size samples and data is not normally distributed. Moreover, PLS-SEM is the preferred SEM method when research objective is prediction (Kock, 2017). Figure 1 shows the hypotheses:

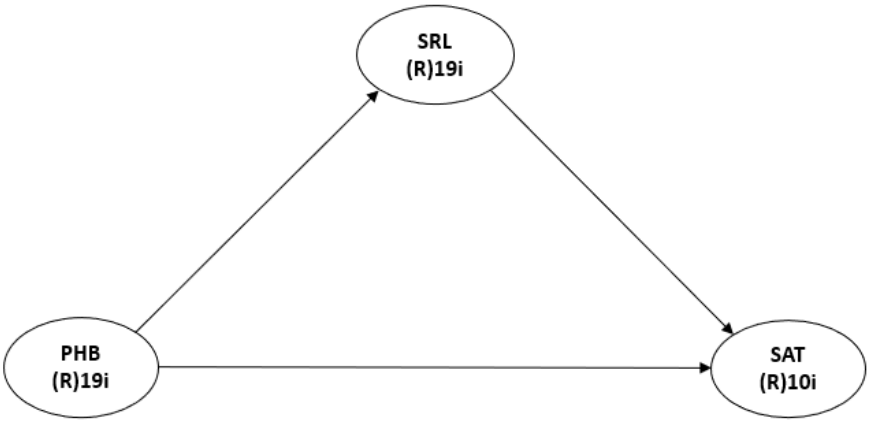

Figure *1.* Hypotheses Model

H1: Is there a positive effect of CFL learners' phonological beliefs on online learning satisfaction?

H2: Is there a positive effect of CFL learners' phonological beliefs on self-regulated online learning?

H3: Is there a positive effect of CFL learners' self-regulated online learning on online learning satisfaction?

■ Results and Discussion

Results of CFL learners' phonological beliefs

The phonological beliefs of the CFL learners are displayed in Table 2. The mean of subscale (1) assessing learners' awareness of the significance of acquiring CFL pronunciation is 4.55 (SD 0.65), showing that participants strongly agreed that pronunciation learning is important for effective communication and that it's necessary to learn how to pronounce correctly. And learners were dissatisfied with their existing pronunciation but yet wanted to improve it. The mean of the subscale (2) awareness of self-pronunciation is 3.58 (SD 0.93). Participants are more inclined to agree that they would like to improve their pronunciation and that they need to be aware of their pronunciation when speaking Chinese. For the subscale (3), learners agreed that pronunciation instruction should be a part of Chinese education from primary through high school (item ATI 4,5,6), but that it was still possible to pick up the skill at the university level (item ATI 2). And the learners disagreed that one's ability to pronounce words well is determined by natural talent (item ATI 7).

For the subscale (4), learners agreed that pronunciation is improved through online listening and speaking learning activities (item PFP 1). The following instruction strategies were effective for teaching Chinese pronunciation: such as corrections, teachers' explanations, situation dialogues (item PFP 3,4,5). And the learners tended to prefer learning pronunciation from native Chinese speakers as instructors (item PFP 2). In Subscale (5), learners indicated their preferences for various learning strategies aimed at improving their pronunciation in Chinese. The mean scores reflect the levels of agreement with each strategy, providing insights into their favored methods. Participants strongly agreed that exposure to Chinese TV dramas and movies significantly contributed to their pronunciation improvement (PPL 5). Additionally, shadowing (PPL 1), listening to Chinese songs (PPL 4), and engaging in LMS listening and speaking online exercises (PPL 2) were indicated as effective methods. However, they were less inclined to agree that group learning significantly contributed to their pronunciation improvement (PPL 3). It indicates a preference for self-directed and technology-based methods over group-oriented learning for enhancing their Chinese pronunciation skills.

Table 2.

Phonological Beliefs Results (PHB)

Construct	Mean	SD
Subscale 1: Awareness of importance of learning pronunciation (API)	4.55	0.65
API 1: Pronunciation learning is important.	4.55	0.64
API 2: Pronunciation is necessary for effective communication.	4.60	0.62
API 3: It is important to learn how to pronounce.	4.51	0.70
Subscale 2: Awareness of self-pronunciation (ASP)	3.58	0.93
ASP 1: I am satisfied with my current level of pronunciation.	3.02	0.99
ASP 2: I would like to improve my pronunciation.	4.07	0.85
ASP 3: Meaning gets across even when pronunciation contains some errors.	3.06	1.05

Construct	Mean	SD
ASP 4: I need to be aware of my pronunciation when I speak Chinese.	4.16	0.84
Subscale 3: Attitudes toward pronunciation instruction (ATI)	3.51	1.04
ATI 1: Pronunciation should be learned at young ages	3.88	1.09
ATI 2: It is too late to learn pronunciation at university.	2.03	1.17
ATI 3: Pronunciation learning should be included in Chinese education in universities.	3.84	1.09
ATI 4: Pronunciation learning should be included in Chinese education in elementary schools.	4.06	0.99
ATI 5: Pronunciation learning should be included in Chinese education in junior high schools.	4 .11	0.95
ATI 6: Pronunciation learning should be included in Chinese education in senior high schools.	4.16	0.89
ATI 7: A natural talent determines whether one can pronounce well.	2.49	1.13
Subscale 4: Perceptions of foreign language pronunciation instruction (PFP)	4.11	0.80
PFP 1: Pronunciation is improved through online listening and speaking learning activities.	3.76	0.81
PFP 2: Pronunciation should be only learned from native Chinese-speaking teachers.	4.01	0.94
PFP 3: Teacher explains how to pronounce Chinese phonetics that can help me to improve pronunciation.	4.27	0.75
PFP 4: Teacher corrects my pronunciations that can help to improve my pronunciation.	4.32	0.74
PFP 5: Situation dialogues help improve pronunciation.	4.20	0.75
Subscale 5: Preferred pronunciation learning strategies (PPL)	4.27	0.78
PPL 1: Shadowing (reading aloud after the teacher in the classroom or listen to the audio then repeat) can help me to improve pronunciation.	4.27	0.78
PPL 2: Doing listening and speaking exercises multiple times online through the LMS can improve my pronunciation.	4.02	0.82
PPL 3: The group learning helps me to improve my pronunciation.	3.47	1.02
PPL 4: Listening to Chinese songs helps me to improve my pronunciation.	4.14	0.87
PPL 5: Watching Chinese TV dramas and movies helps me to improve my pronunciation.	4.39	0.77

Results of CFL learners' self-regulated online learning strategies

Table 3 displays CFL learners' self-regulated online learning. For subscale (1) goal setting, the learners agreed that making goals can help them organize their study time, and they can set both short-term and long-term goals for pronunciation learning (item GS 2,4). The learners stated that they established expectations for the online speaking and listening tasks (item GS 1), but they did not maintain these expectations or the quality of their work because it was done online (item GS 3,5). The mean of choosing a place and time to prevent distractions (item ES 1,3) and a comfortable study place (item ES 2) is not high for the subscale (2) learning environment structuring. In subscale (3), the online learning task strategies that learners preferred included practicing before submitting speaking assignments (item TLS 8), listening to audio files more than once to remember the pronunciation, and speaking aloud after analyzing and recalling (item TLS 7). The learners admitted that they listened intently and tried to distinguish between Chinese finals and Chinese initials, but they lacked confidence and believed they couldn't speak them correctly (item TLS 2,3). Additionally, they self-reported that they had paid close attention to the Chinese words and sentences, but that they still lacked confidence in their ability to pronounce them. The participants demonstrated poor time management skills for subscale (4). They didn't believe they had good time management abilities or the ability to multitask (item TM 4, 5). They may not have considered pronunciation learning to be time-consuming, and they preferred not to set aside additional study time for online learning exercises (item TM 1). Additionally, they did not want to plan online learning assignments to be completed at the same time each day or each week (item TM 2), nor did they choose to divide the time spent online learning evenly among the days (item TM 3).

The findings for subscale (5) help seeking showed that the students preferred to get help from their classmates and teachers online rather than disclose their learning difficulties with them (item HS 1,2). For subscale (6) self-evaluation, participants agreed to some extent that they engage in summarizing their learning to assess their understanding (item SE 1). This implies that while they may occasionally summarize their learning, it's not a very consistent practice for them. They somewhat agreed that they ask themselves questions about the course material while studying (item SE 2). This suggests that while they do engage in this behavior, it's not extremely frequent or intensive. The rating of item SE 3 reflects a higher level of agreement or engagement. Participants agreed to a considerable extent that they communicate with classmates to assess their progress in online classes. This indicates that seeking feedback from peers is a relatively common practice for them. The rating of item SE 4 suggests another moderate level of agreement or engagement. Participants somewhat agreed that they interact with classmates to understand differences in what they are learning Chinese pronunciation. This indicates that while they do seek out such information, it might not be a frequent practice for them.

Table 3.

Learners' self-regulated online learning (SRL)

Construct	Mean	SD
Subscale 1: Goal setting (GS)	3.96	0.79
GS 1: I set standards for LMS online learning assignments.	4.02	0.74
GS 2: I set short-term (daily or weekly) goals as well as long-term goals (monthly or for the semester) for pronunciation learning.	4.02	0.75
GS 3: I keep a high standard for my practicing speaking in LMS.	3.84	0.83
GS 4: I set goals to help me manage study time for my LMS online speaking and listening learning activities.	4.16	0.77
GS 5: I don't compromise the quality of my work because it is online.	3.76	0.87
Subscale 2: Learning environment structuring (ES)	3.80	0.88
ES 1: I choose the location where I do online LMS listening and speaking exercises to avoid too much distraction.	3.74	0.89
ES 2: I usually find a comfortable place to do the online exercises.	3.76	0.94
ES 3: I choose a time with few distractions for my online exercises.	3.89	0.80
Subscale 3: Online learning task strategies (TLS)	3.75	0.84
TLS 1: I try to listen to all the audios more than once to try to remember the pronunciation.	3.92	0.83
TLS 2: When I listen to the initials from the audio, I can discriminate between different Chinese initials. And I can pronounce them well.	3.22	0.82
TLS 3: When I listen to the finals from the audio, I can discriminate between the different Chinese finals. And I can pronounce them well.	3.60	0.84
TLS 4: When I listen to the words from the audio, I listen carefully, and I can pronounce them well.	3.60	0.75
TLS 5: When I listen to the sentences from the audio, I listen carefully, and I can pronounce them well.	3.60	0.79
TLS 6: I read aloud immediately after I listened to the audio.	3.85	0.88
TLS 7: I listened to the audio, and then I tried to analyze, to recall. Finally, I speak aloud.	4.13	0.87
TLS 8: I practiced before I submitted speaking assignments.	4.08	0.91
Subscale 4: Time management (TM)	3.84	0.82
TM 1: I allocate extra studying time for my online learning tasks because I know it is time-demanding.	3.93	0.96
TM 2: I try to schedule the same time every day or every week to study for my online learning tasks.	3.88	1.00

Construct	Mean	SD
TM 3: Although we don't have to attend daily classes, I still try to distribute my online learning time evenly across days.	3.75	0.72
TM 4: I have strong time management skills.	3.73	0.75
TM 5: I am a multitasker.	3.90	0.66
Subscale 5: Help seeking (HS)	3.88	0.73
HS 1: I share my problems with my classmates online, so we know what we are struggling with and how to solve our problems.	3.89	0.73
HS 2: I am persistent in getting help from the instructor through e-mail or other social media, line, Facebook, etc.	3.86	0.72
Subscale 6: Self-evaluation (SE)	3.54	0.95
SE 1: I summarize my learning in blended courses to examine my understanding of what I have learned.	3.40	0.88
SE 2: I ask myself a lot of questions about the course material when studying for a blended course.	3.46	0.89
SE 3: I communicate with my classmates to find out how I am doing in my class.	3.73	1.02
SE 4: I communicate with my classmates to find out what I am learning that is different from what they are learning.	3.56	1.02

Results of CFL learners' online learning satisfaction

Table 4 revealed valuable insights into their experiences across three key subscales: positive impact (PI 1-4), meaning focus (MF 1-2), and learner fit (LF 1-2). Subscale (1) positive impact: Learners generally reported positive experiences with online listening and speaking tasks, acknowledging that these activities had a favorable impact on their ability to listen and speak in Chinese. Specifically, they expressed satisfaction with how these tasks contributed to their language skills, both in listening and speaking (item PI 2,3). While the agreement is slightly lower for the impact on further Chinese language learning (item PI 4), it still remains positive. These findings underscore the effectiveness of such exercises in enhancing specific language skills.

Subscale (2) meaning focus: This subscale assesses the extent to which learners are engaged, motivated, satisfied with their responsibilities, and able to apply what they've learned from online exercises. Learners strongly agreed that they were engaged in LMS online speaking and listening exercises (item MF 1). Motivation to succeed in pronunciation by these exercises has a lower but still positive mean score (item MF 2). Learners are somewhat satisfied with the self-directed responsibilities assigned to them (item MF 3), indicating that they feel capable of managing these tasks. They agreed that they would be able to apply what they've learned in future Chinese language learning (item MF 4). Subscale (3) learner fit: This subscale assesses learners' comfort and ease of use when participating in online learning activities. Learners generally agreed that they feel comfortable participating in online exercises (item LF 1). They found it easy to engage

with the online learning activities (item LF2). This positive feedback is crucial, as learners who feel at ease with the technology and the learning environment are more likely to stay motivated and focused.

Table 4.

Learners' satisfaction with online learning activities

Construct	Mean	SD
Subscale 1: Positive Impact (PI)	3.99	0.76
PI 1: LMS online speaking and listening exercises help me learn more about Chinese phonological knowledge.	3.98	0.77
PI 2: LMS online speaking and listening exercises help me improve my listening skills.	4.07	0.70
PI 3: LMS online speaking and listening exercises help me improve my speaking and pronunciation skills.	4.03	0.75
PI 4: LMS online speaking and listening exercises help me for my further Chinese language learning.	3.87	0.80
Subscale 2: Meaning Focus (MF)	3.88	0.83
MF 1: Generally, I am more engaged in LMS online speaking and listening exercises.	4.21	0.76
MF 2: I am motivated to succeed in my pronunciation by LMS online speaking and listening exercises.	3.72	0.89
MF 3: I am satisfied with the self-directed responsibilities assigned to me.	3.71	0.89
MF 4: I am able to apply what I learned in future Chinese language learning.	3.88	0.78
Subscale 3: Learner Fit (LF)	3.82	0.88
LF 1. I am comfortable participating in online exercises.	3.74	0.93
LF 2. It is easy to use LMS online listening and speaking exercises.	3.90	0.83

Results of the relationships among CFL learners' phonological beliefs, self-regulated online strategies and online learning satisfaction

This study applied WarpPLS 8.0 software to conduct data analysis in order to respond to research question 4 (the relationships among fundamental CFL learners' phonological beliefs, self-regulated online learning, and satisfaction with asynchronous online learning activities). WarpPLS 8.0 uses the composite-based approach, factor-based method, and "warped" partial least square (PLS) method to do a structural equation modeling (SEM) analysis (Kock, 2022). When working with several variables, structural equation modeling, a statistical method for estimating and assessing causal linkages, has advantages over regression and path analysis. Because it has some benefits, PLS-SEM was chosen. PLS-SEM is capable of handling small size samples and data that is not normally distributed, among other things. It can handle both formative and reflecting indicators for latent variables, requires minimal measurement scales, and requires just a few

variables to be considered. Additionally, PLS-SEM is the recommended SEM technique when prediction is the study goal.

Table 5

Path Coefficients

	PHB	SRL	SAT
SRL	0.57		
SAT	0.15	0.66	

Table 6.

Correlations among l.vs. with sq. rts. of AVEs

	PHB	SRL	SAT
PHB	0.61	0.55	0.53
SRL	0.55	0.61	0.74
SAT	0.53	0.74	0.74

Table 5 demonstrates path coefficients among the 3 questionnaires. The coefficient of 0.66 indicates a positive relationship between SRL (self-regulated online learning) and SAT (online learning satisfaction). This means that as SRL increases, SAT tends to increase as well. This indicates that self-regulated online learning is an important factor in determining how satisfied students feel. The coefficient of 0.57 represents the moderate relationship between PHB (phonological beliefs) and SRL (self-regulated online learning). This positive coefficient suggests that as PHB increases, SRL also tends to increase, with a moderate strength of relationship. This suggests that stronger perceptions or behaviors of PHB is associated with better self-regulation online learning. The coefficient of 0.15 represents a weak positive relationship between PHB and SAT, meaning PHB has a small effect on SAT.

Table 6 illustrates the correlations among the latent variables (PHB, SRL, and SAT) along with the square roots of the Average Variance Extracted (AVE) for each construct. The constructs measured by the PHB, SRL, and SAT questionnaires show good convergent validity, with the square roots of AVE values exceeding the 0.50 threshold, specifically at 0.61 and 0.74. The correlations reveal moderate positive relationships between phonological beliefs and both self-regulated online learning (0.55) and online learning satisfaction (0.53). Additionally, there is a strong positive correlation between self-regulated online learning and online learning satisfaction (0.74). These results indicate an interconnectedness among the constructs and provide for the further relationship analysis.

Figure 2 shows the relationship among CFL learners' phonological beliefs, self-regulated online learning, and learners' online learning satisfaction. The 3 hypotheses supported in the current study, and p value < 0.01 is considered statistically significant. They are as follows:

H1: CFL learners' phonological beliefs have a positive effect on online learning satisfaction.

H2: CFL learners' phonological beliefs have a positive effect on self-regulated online learning.

H3: CFL learners' self-regulated online learning has a positive effect on online learning satisfaction.

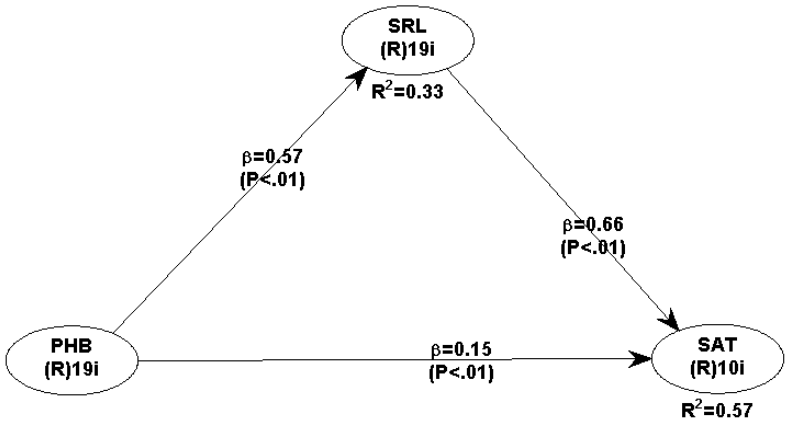

Figure *2.* Relationship model with values

Discussion

In a blended learning environment, the results of the phonological beliefs questionnaire indicated that MFU first-year CFL learners had a solid understanding of the significance of mastering Chinese pronunciation. They were aware of their pronunciation, and they wanted to make it better. The research supports the idea that pronunciation instruction is crucial for foreign language learners (Alghazo, 2015; Nguyen et al., 2021). They held a positive attitude toward learning pronunciation and did not necessarily believe that innate capacity determines one's ability to pronounce properly. They believed that learning pronunciation should be a requirement from elementary school through university, emphasizing that it is never too late to learn even at the university level. While the learners acknowledge that certain pronunciation problems can hinder effective communication of meaning. The findings align with Yokomoto (2014) but contradict Simon and Taverniers (2011).

Regarding MFU first-year CFL learners' perceptions of pronunciation instruction, they expressed their beliefs in the most effective instructional methods. They indicated that the teacher correcting learners' pronunciation immediately was deemed the most effective, aligning with findings presented by Alghazo (2015). Subsequently, the second most effective method, as perceived by these learners, involved the teacher explaining Chinese phonetics, consistent with the conclusions drawn by Nguyen et al.(2021). From the learners' perspective, pronunciation instruction serves not only to enhance their listening and speaking skills but also facilitates further self-practice outside the classroom, particularly through situational dialogues. Additionally, these learners showed a preference for learning from Chinese native-speaking teachers, that aligns with the findings of Simon and Taverniers (2011) and Yokomoto (2014). The learners thought that reading aloud, practicing listening and speaking tasks online repeatedly on a learning management system, watching Chinese TV dramas and movies, listening to Chinese songs, and intimating

were the most successful self-learning strategies. These results supported the earlier studies by Dan (2020) and Nowacka (2012). According to Dan's research (2020), reading aloud to oneself, listening and imitating authentic speech, drilling challenging words and phrases, using transcription, and verifying word pronunciation in dictionaries are effective cognitive pronunciation learning strategies. Furthermore, the learners of this study did not fully believe that group learning could aid in their pronunciation improvement, this some extent confirms Nowacka (2012), the cognitive strategies play the most significant role, while the learners utilized mainly metacognitive strategies (e.g., planning for a language task or self-evaluation) rather than social strategies in learning pronunciation process.

The findings from the self-regulated online learning questionnaire indicates that the learners expressed a positive attitude towards goal setting, recognizing its potential to help them organize their study time and pronunciation learning. They were willing to set both short-term and long-term goals. However, it is noteworthy that while they established expectations for online tasks, they struggled to maintain these expectations and the quality of their work. This could be attributed to the challenges associated with online learning, such as distractions and the lack of physical supervision. This implies that instructors have to design online learning activities to help learners commit control strategies for increasing their goals' commitment (Dörnyei & Muir, 2019). For the learning environment, they didn't rate the importance of selecting a dedicated study place and time very highly. This suggests that learners may not fully appreciate the significance of creating a conducive online learning atmosphere, which can impact their overall learning experience. And this study revealed a lack of effective time management skills among the learners. They did not believe they had good time management abilities, were reluctant to allocate additional study time for online exercises, and did not want to adhere to a consistent study schedule. While in the online learning environment, that requests more learners' autonomy (Lin et al., 2021). Effective time management remains a challenge for learners. There is a need for instructors' intervention that emphasizes the significance of creating a conducive study space and time. Instructors should consider incorporating time management strategies into learners' online learning activities and provide resources to help them better allocate their study time.

In this study, learners demonstrated a preference for certain task strategies, such as practicing before submitting speaking assignments, practice shadowing skills to improve pronunciation, particularly in the context of pronunciation improvement. However, they also admitted to lacking confidence in their pronunciation abilities. Self-knowledge of strengths and weaknesses, as part of a general emphasis on monitoring, is very important in achieving good learning outcomes. Learners also need to be aware of their own strategies for learning and the relative effectiveness of those strategies (Zhang, 2019). These strategies for learning include everything from cognitive learning strategies, such as memorizing, comparing the pronunciations, shadowing and finding native speakers to talk to improve listening and speaking, and so on. Learners preferred seeking help from their peers and teachers online rather than disclosing their learning difficulties. This suggests that while they are open to seeking assistance, they may also be hesitant to admit

when they are struggling. Therefore, creating a supportive and non-judgmental online learning environment is crucial to encourage learners to address learning difficulties and seek help (Zhang, 2023).

The findings from the online learning satisfaction survey demonstrates that learners' positive experiences with online learning tasks, they expressed satisfaction with how these tasks contributed to their language listening and speaking skills. They agreed that they are able to apply what they've learned in future Chinese language learning. It indicates that task values can increase foreign language learners learning satisfaction(Asoodar et al., 2016). MFU first-year CFL learners' motivation to succeed in pronunciation by these exercises has a lower but still positive mean score. Learners are somewhat satisfied with the self-directed responsibilities assigned to them, indicating that they feel capable of managing these tasks. The findings indicated that motivation for pronunciation improvement and self-regulated learning abilities could be further enhanced (Lim et al., 2020). Learners generally agreed that they feel comfortable participating in online learning, they found it easy to engage with the online learning tasks. This positive feedback is crucial, as learners who feel at ease with the technology and the learning environment are more likely to stay motivated and focused(Katsarou, 2021).

The findings of this study provide valuable insights into the relationships among MFU first-year CFL learners' phonological beliefs, self-regulated online learning, and satisfaction with online learning activities. The analysis revealed several significant associations and trends that contribute to our understanding of Thai CFL learners' experiences in blended learning environments. Firstly, the study highlighted the importance of phonological beliefs in CFL learners' pronunciation instruction. Learners who held positive beliefs about the importance of pronunciation, learning strategies and the effectiveness of instruction demonstrated higher levels of satisfaction with online learning activities. The findings has confirmed the research of Alqurashi (2019) and Dorand (2021). This suggests that addressing learners' phonological beliefs and emphasizing the value of pronunciation instruction in blended CFL courses can enhance their engagement and overall satisfaction. The identification of specific learning strategies, such as shadowing, explicit pronunciation instruction, and instructor's feedback, provide valuable insights for instructors in designing effective online activities that align with learners' preferences and promote engagement. Secondly, the study implies that MFU first-year CFL learners' phonological beliefs might influence their ability to self-regulate their online learning behaviors. Learners who possessed positive phonological beliefs are more likely to exhibit effective self-regulated learning behaviors in an online environment, they might engage more actively in self-regulated learning strategies while navigating online learning platforms. Foreign language learners' positive future image and intrinsic interest are leading to better self-regulation, furthermore, the role of foreign language learning beliefs in shaping learning actions, indicating that foreign learners' phonological beliefs can influence their self-regulated online learning (Wang & Zhan, 2020; Zheng et al., 2018). Thirdly, self-regulated online learning emerged as a crucial factor influencing learners' satisfaction with online learning activities. MFU first-year university learners who exhibited greater self-regulation skills, including goal setting, time management, and metacognitive strategies, reported higher satisfaction levels. These findings are consistent as Lim et al.(2020) and Lynch and Dembo (2004). The study

emphasizes the need to foster self-regulatory abilities among CFL learners through targeted interventions and instructional support.

The relevant pedagogical implications are also discussed. First, teachers are encouraged to raise students' phonological awareness and help them realize the importance of Chinese pronunciation. Appropriated learner beliefs are crucial for sustaining motivated foreign language learning, as they can serve as an effective mediational tool. This is because the degree of internalization of learner beliefs plays a critical role in this process (Yang & Kim, 2011). Second, to enhance learners' experience in a blended learning environment, instructors may consider effective instructional methods, such as explicit explanation of Chinese pronunciation, providing timely feedback and employing situation dialogues tailored to improve learners' personal speaking skills, while continuing to prioritize engagement. Third, the instructors may design online learning activities to promote learners' using cognitive learning strategies, such as reading aloud to oneself, listening to and imitating authentic speech, drilling challenging words and phrases, using transcription, and verifying word pronunciation in dictionaries (Nowacka, 2012; Umeanowai & Lei, 2022), while activating their integrative and instrumental motivation, so as to suppress learning anxiety and foster self-regulated learning skills. Fourth, instructors expect the students to be highly motivated and satisfied in blended learning environments, to create a supportive and non-judgmental learning environment is crucial to encourage learners to address their learning difficulties and seek help. Lastly, the research revealed the significance of time management skills in online CFL learning. This emphasizes the importance of providing learners with resources and strategies to improve their self-directed learning abilities and metacognitive skills, leading to more positive learning experiences.

■ Conclusion

This study has explored the intricate relationships among MFU first-year learning Chinese as a foreign language (CFL) learners' phonological beliefs, self-regulated online learning, and satisfaction with online learning activities. The findings demonstrate the interconnectedness of these factors and their impact on CFL learners' experiences in online environments.

The implications of this research are twofold. Firstly, it emphasizes the importance of addressing learners' phonological beliefs and highlighting the value of pronunciation instruction in blended CFL courses. By integrating pronunciation-focused activities and fostering positive beliefs, instructors can enhance learners' engagement and overall satisfaction.

Secondly, the study underscores the need to promote self-regulated learning skills among CFL learners. Providing explicit instruction on goal setting, time management, and metacognitive strategies can empower learners to take control of their learning process and maximize their satisfaction with online activities.

Additionally, the identification of preferred pronunciation learning strategies and the significance of time management skills contribute to the design of effective blended CFL courses. By incorporating learners'

preferred strategies and providing resources for time management, instructors can create an environment that facilitates successful online learning experiences.

In conclusion, this study highlights the complex interplay between fundamental CFL learners' phonological beliefs, self-regulated online learning, and satisfaction with online learning activities. By understanding and addressing these factors, educators can enhance CFL learners' experiences and promote their overall success in blended learning environments.

■ Limitations and Recommendations

Despite the positive findings, the study faced limitations, such as the challenges of maintaining consistent quality and expectations in an online learning environment due to distractions and lack of supervision. Future research should explore strategies and tools to enhance learners' commitment and time management skills, as well as the impact of a conducive blended learning environment on learning outcomes. Additionally, it is recommended to conduct a qualitative study to gain a deep understanding of Thai university CFL learners' phonological beliefs, self-regulated online learning, and online learning satisfaction. Exploring Thai CFL university instructors' perspectives on pronunciation teaching and learning, and comparing them with learners' perspectives, could also contribute to improving pedagogical practices.

■ Acknowledgement

I would like to thank the students who participated in this research, the School of Sinology at Mae Fah Luang University for their support, and my colleagues who encouraged me.

■ References

Albiladi, W., & Alshareef, K. (2019). Blended Learning in English Teaching and Learning: A Review of the Current Literature. *Journal of Language Teaching and Research*, *10*, 232. https://doi.org/10.17507/jltr.1002.03

Alghazo, S. M. (2015). Advanced EFL Learners' Beliefs about Pronunciation Teaching. *International Education Studies*, *8*(11), 63–76.

Alqurashi, E. (2019). Predicting student satisfaction and perceived learning within online learning environments. *Distance Education*, *40*(1), 133–148. https://doi.org/10.1080/01587919.2018.1553562

Asoodar, M., Vaezi, S., & Izanloo, B. (2016). Framework to improve e-learner satisfaction and further strengthen e-learning implementation. *Computers in Human Behavior*, *63*, 704–716. https://doi.org/10.1016/j.chb.2016.05.060

Banditvilai, C. (2016). Enhancing Students' Language Skills through Blended Learning. *Electronic Journal of E-Learning*, *14*, 220–229.

Barnard, L., Lan, W. Y., To, Y. M., Paton, V. O., & Lai, S.-L. (2009). Measuring self-regulation in online and blended learning environments. *The Internet and Higher Education*, *12*(1), 1–6. https://doi.org/10.1016/j.iheduc.2008.10.005

Barnard-Brak, L., Paton, V. O., & Lan, W. Y. (2010). Profiles in Self-Regulated Learning in the Online Learning Environment. *International Review of Research in Open and Distributed Learning*, *11*(1), 61–80. https://doi.org/10.19173/irrodl.v11i1.769

Brandmo, C., & Berger, J.-L. (2013). Fostering Self-Regulated Learning: An Introduction. *Journal of Cognitive Education and Psychology*, *12*, 127–137. https://doi.org/10.1891/1945-8959.12.2.127

Broadbent, J., & Poon, W. L. (2015). Self-regulated learning strategies & academic achievement in online higher education learning environments: A systematic review. *The Internet and Higher Education*, *27*, 1–13.

Celce-Murcia, M., Brinton, D. M., & Goodwin, J. M. (2010). *Teaching Pronunciation Hardback with Audio CDs (2): A Course Book and Reference Guide*. Cambridge University Press.

Cenoz, J., & Lecumberri, M. L. G. (1999). The acquisition of English pronunciation: Learners' views. *International Journal of Applied Linguistics*, *9*(1), 3–15. https://doi.org/10.1111/j.1473-4192.1999.tb00157.x

Chapelle, C. (2001). *Computer applications in second language acquisition: Foundations for teaching, testing and research*. Cambridge University Press.

Chen, R., Iqbal, J., Liu, Y., Zhu, M., & Xie, Y. (2022). Impact of self-concept, self-imagination, and self-efficacy on english language learning outcomes among blended learning students during COVID-19. *Frontiers in Psychology*, *13*, 784444.

Chen, W. S., & Yao, A. Y. T. (2016). An Empirical Evaluation of Critical Factors Influencing Learner Satisfaction in Blended Learning: A Pilot Study. *Universal Journal of Educational Research*, *4*(7), 1667–1671.

Churchill, G., & Iacobucci, D. (2005). *Sampling procedures. Marketing research*.

Couper, G. (2003). The value of an explicit pronunciation syllabus in ESOL teaching. *Porspect,18*, 53-70.

Cui, Y. (2014). *Beliefs about language learning: A study of post-secondary non-native learners of Chinese and teachers of Chinese in North America*. http://hdl.handle.net/1828/5208

Dan, D. (2020). A Study on Chinese Phonetics and Pronunciation Teaching in TCSOL. *International Chinese Language Education*, *2*, 51–59.

Dorand, P. (2021). *Analyzing Online Learning Satisfaction and Language Learning Strategies Use*. *Volume 2*, 2686–1089.

Dörnyei, Z., & Muir, C. (2019). Creating a motivating classroom environment. *Second Handbook of English Language Teaching*, 719–736.

Duncan, T. G., & McKeachie, W. J. (2005). The making of the motivated strategies for learning questionnaire. *Educational Psychologist*, *40*(2), 117–128.

Fan, J., & Tian, M. (2024). Satisfaction with Online Chinese Learning among International Students in China: A Study Based on the fsQCA Method. *Sustainability*, *16*(3), Article 3. https://doi.org/10.3390/su16031086

Katsarou, E. (2021). The Effects of Computer Anxiety and Self-Efficacy on L2 Learners' Self-Perceived Digital Competence and Satisfaction in Higher Education. *Journal of Education and E-Learning Research*, *8*(2), 158–172.

Kock, N. (2017). *WarpPLS User Manual: Version 6.0*. Laredo, TX: ScriptWarp Systems.

Kock, N. (2022). *Model-Driven Data Analytics: Applications with WarpPLS*.

Lee, T.-H., Shen, P.-D., & Tsai, C.-W. (2008). Applying web-enabled problem-based learning and self-regulated learning to add value to computing education in Taiwan's vocational schools. *Journal of Educational Technology & Society*, *11*(3), 13–25.

Lehmann, T., Haehnlein, I., & Ifenthaler, D. (2014). Cognitive, metacognitive and motivational perspectives on preflection in self-regulated online learning. *Computers in Human Behavior*, *32*, 313–323. https://doi.org/10.1016/j.chb.2013.07.051

Lim, C. L., Ab Jalil, H., Ma'rof, A. M., & Saad, W. Z. (2020). Self-Regulated Learning as a Mediator in the Relationship between Peer Learning and Online Learning Satisfaction: A Study of a Private University in Malaysia. *Malaysian Journal of Learning and Instruction*, *17*(1), 51–75.

Lin, L., Gong, Y., & Xu, N. (2021). Online Self-Regulated Learning Profiles: A Study of Chinese as a Foreign Language Learners. *Frontiers in Psychology*, *12*, 797786. https://doi.org/10.3389/fpsyg.2021.797786

Liu, W., & Yu, H. (2012). Effectiveness study of English learning in blended learning environment. *Theory & Practice in Language Studies*, *2*(3).

Lynch, R., & Dembo, M. (2004). The Relationship between Self-Regulation and Online Learning in a Blended Learning Context. *International Review of Research in Open and Distributed Learning*, *5*(2), 1–16. https://doi.org/10.19173/irrodl.v5i2.189

Moyer, A. (2014). Exceptional Outcomes in L2 Phonology: The Critical Factors of Learner Engagement and Self-Regulation. *Applied Linguistics*, *35*(4), 418–440. https://doi.org/10.1093/applin/amu012

Nguyen, L. T. (2019). *Enhancing pronunciation teaching in the tertiary EFL classrooom: A Vietnamese case study*. Open Access Te Herenga Waka-Victoria University of Wellington.

Nguyen, L. T., Hung, B. P., Duong, U. T. T., & Le, T. T. (2021). Teachers' and Learners' Beliefs About Pronunciation Instruction in Tertiary English as a Foreign Language Education. *Frontiers in Psychology*, *12*. https://www.frontiersin.org/articles/10.3389/fpsyg.2021.739842

Nowacka, M. (2012). Questionnaire-Based Pronunciation Studies: Italian, Spanish and Polish Students' Views on their English Pronunciation. *Research in Language*, *10*. https://doi.org/10.2478/v10015-011-0048-3

Nushi, M., Jafari, R., & Golesorkhi, Z. (2019). Iranian EFL Learners' Beliefs towards Teaching and Learning of Pronunciation. *Two Quarterly Journal of English Language Teaching and Learning University of Tabriz*, *11*(23), 221–251.

Pintrich, P. R. (2000). Chapter 14—The Role of Goal Orientation in Self-Regulated Learning. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of Self-Regulation* (pp. 451–502). Academic Press. https://doi.org/10.1016/B978-012109890-2/50043-3

Rowe, F. A., & Rafferty, J. A. (2013). Instructional design interventions for supporting self-regulated learning: Enhancing academic outcomes in postsecondary e-learning environments. *Journal of Online Learning and Teaching*, *9*(4), 590–601.

Şahin Kızıl, A. (2017). EFL learners in the digital age: An investigation into personal and educational digital engagement. *RELC Journal*, *48*(3), 373–388.

Simon, E., & Taverniers, M. (2011). Advanced EFL Learners' Beliefs about Language Learning and Teaching: A Comparison Between Grammar, Pronunciation, and Vocabulary. *English Studies*, *92*(8), 896–922. https://doi.org/10.1080/0013838X.2011.604578

Topala, I., & Tomozii, S. (2014). Learning Satisfaction: Validity and Reliability Testing for Students' Learning Satisfaction Questionnaire (SLSQ). *Procedia - Social and Behavioral Sciences*, *128*, 380–386. https://doi.org/10.1016/j.sbspro.2014.03.175

Umeanowai, K., & Lei, W. (2022). A Study of Chinese learners' Beliefs, Strategy use and Proficiency in Learning Chinese as a Foreign Language. *International Journal of Linguistics Studies*, *2*, 19–30. https://doi.org/10.32996/ijls.2022.2.1.3

Wang, W., & Zhan, J. (2020). The Relationship between English Language Learner Characteristics and Online Self-regulation: A Structural Equation Modeling Approach. *Sustainability*, *12*(7), Article 7. https://doi.org/10.3390/su12073009

Weinstein, C. E., Acee, T. W., & Jung, J. (2011). Self‐regulation and learning strategies. *New Directions for Teaching and Learning*, *2011*(126), 45–53.

Wenden, A. (1986). Helping language learners think about learning. *ELT Journal*, *40*(1), 3–12. https://doi.org/10.1093/elt/40.1.3

Wenden, A. L. (2002). Learner development in language learning. *Applied Linguistics*, *23*(1), 32–55.

Wu, J.-H., Tennyson, R. D., & Hsia, T.-L. (2010). A study of student satisfaction in a blended e-learning system environment. *Computers & Education*, *55*(1), 155–164.

Xu, W., Zhang, H., Sukjairungwattana, P., & Wang, T. (2022). The roles of motivation, anxiety and learning strategies in online Chinese learning among Thai learners of Chinese as a foreign language. *Frontiers in Psychology*, *13*, 962492.

Yang, J., & Medwell, J. (2017). Learners' and Teachers' Beliefs About Learning Tones and Pinyin. In I. Kecskes (Ed.), *Explorations into Chinese as a Second Language* (pp. 141–163). Springer International Publishing. https://doi.org/10.1007/978-3-319-54027-6_6

Yang, J.-S., & Kim, T.-Y. (2011). Sociocultural analysis of second language learner beliefs: A qualitative case study of two study-abroad ESL learners. *System*, *39*(3), 325–334. https://doi.org/10.1016/j.system.2011.07.005

Yokomoto, K. (2014). A Pilot Survey: University Students' Beliefs about Pronunciation Learning and Their Expectations. *The Journal of Rikkyo University Language Center*, *31*, 115–125.

https://doi.org/10.14992/00007686

Zhang, B. (2023). The Relationship Between Teacher-Student Rapport and EFL Learners' Engagement in Online Scaffolding Setting. *Journal of Psycholinguistic Research*, *52*(5), 1685–1705. https://doi.org/10.1007/s10936-023-09954-3

Zhang, S. (2019). Chinese-as-a-Foreign-Language Learners' Use of Self-Regulated Learning in Flipped/Blended Learning Environments – A Descriptive Study. *Studies in Self-Access Learning Journal*, 181–204. https://doi.org/10.37237/100205

Zheng, C., Liang, J.-C., Li, M., & Tsai, C.-C. (2018). The relationship between English language learners' motivation and online self-regulation: A structural equation modelling approach. *System*, *76*, 144–157. https://doi.org/10.1016/j.system.2018.05.003

Zheng, C., Liang, J.-C., Yang, Y.-F., & Tsai, C.-C. (2016). The relationship between Chinese university students' conceptions of language learning and their online self-regulation. *System*, *57*, 66–78. https://doi.org/10.1016/j.system.2016.01.005