A Complex Dynamic Systems Approach to Foreign Language Learners' Anxiety in the Emergency Online Language Classrooms

Thu-Nguyet Huynh (httnguyet@ufl.udn.vn)
National Taiwan Normal University, Taiwan

Abstract

This study explored the foreign language anxiety of learners in the emergency online language classroom under the framework of Complex Dynamic Systems Theory. The data was collected quantitatively and qualitatively to investigate this multifaceted and non-ergodic human characteristic. During the emergency online language learning, twenty-one college students from a university in Vietnam were invited to respond to the FLCAS questionnaire and jot down study journals weekly. Results from data analysis revealed the fluctuation of learners' anxiety levels when the face-to-face foreign language classroom was shifted to an online platform. They also unfolded some affected factors that unexpectedly emerged due to this transition. Those results complied with the two core themes of CDST, i.e. dynamism and emergence when this theory is applied to research on second language acquisition. They also highlighted the need to prepare language teachers with adequate online language pedagogy.

Keywords: Dynamics, emergency, online foreign language classrooms, anxiety, pandemic

Introduction

Originated in pure mathematics, the Dynamic Systems Theory (hereinafter DST) was introduced to Second Language Acquisition (SLA henceforth), and it has set a "dynamic turn" in research on SLA since then (Dörnyei et al., 2015). Proponents of the DST believe that any developmental change of an ecological entity would involve "a set of variables/factors that mutually affect each other's change over time" (van Geert, 1994, p. 50). As such, when being applied to SLA research, this theory, which is currently coined as Complex Dynamic Systems Theory (CDST) (de Bot, 2015a), has made significant changes in research direction. First, learners' language ability is no longer seen as a unidirectional vector; rather, it is seen as a bidirectional change, including growth and attrition during the learning process. Second, CDST emphasizes that language is a process rather than a product (de Bot et al., 2013). Accordingly, advocates of CDST normally applied it to investigate "the interactive effect of different factors" and "how this effect changes over time" (Ellis, 2019, p. 61). In other words, research in this line centres on two core themes: *dynamism* and *emergence* (Larsen-Freeman, 2015). While *dynamism* focuses on the changes during the language development process, emergence is the spontaneous occurrence of something new arising from the interactions of various components in the system. In this vein, CDST has been applied to research on linguistic

aspects such as the development of L2 writing or changes in the use of language (Baba & Nitta, 2014; Fogal & Verspoor, 2020; Verspoor et al., 2004; Verspoor et al., 2012).

Besides giving new insights to research on language development, the CDST approach also offers a holistic view of language learners, examining both micro- and macro-level contributing factors. Specifically, when being expanded to research on affective factors, CDST sees learners' affects (i.e., motivation and anxiety) as the focal elements and examines how learners' affects interact with other components in the language learning system (Li et al., 2019). In particular, while researching motivation and anxiety, CDST scholars focus mostly on anxiety issues, particularly those in the Foreign Language (FL) settings. Unlike the non-CDST approach which sees FL anxiety as a static construct evolving linearly over time (Dörnyei & Ryan, 2015), advocates of CDST such as MacIntyre (2017) argue that language anxiety "has both internal and social dimensions" (p. 28), with the latter constantly interacting with the former over time in a non-linear manner. Specifically, on the one hand, FL anxiety is influenced by "internal physiological processes." On the other hand, FL anxiety is also diachronically mediated by "cognitive and emotional states" induced by the situational demands and the involving individuals in social interactions over different timescales.

Examinations of anxiety through the lens of CDST highlight the limitations in common methodological research frameworks for anxiety studies (MacIntyre, 2017). In particular, anxiety has long been considered a measurable construct and quantitatively examined by self-report questionnaires (e.g., FLCAS; Horwitz et al., 1986). In addition, as questionnaire(s) are mostly distributed at one time to large numbers of participants, they only capture a snapshot of anxiety at a particular point in time despite the observation of learners' affect changing over time. In this case, examinations of FL anxiety using only the quantitative approach or instrument would inevitably introduce ergodicity problems because most psychological phenomena (such as anxiety) are non-ergodic (Hamaker, 2012). In other words, statistical results obtained only from the questionnaires cannot reveal individuals' voices on their emotions. This, in turn, suggests that variance and uniqueness between and among learners cannot be uncovered (Lowie & Verspoor, 2019)—an insight that will shed light on differentiated instruction.

Modern research on anxiety has thus called for non-conventional research protocols. Contemporary research postulates that FL anxiety is a complex and multifaceted human characteristic. Accordingly, anxiety should be examined quantitatively and qualitatively within a larger complex of individual factors (Kráľová, 2016). For instance, we should examine anxiety in the whole learning process (MacIntyre, 2017), or identify the unique anxiety profiles of individuals (Horwitz, 2017). In this vein, the CDST approach, which encourages the inclusion of both quantitative and qualitative methods, and the complementation of group studies and individual case studies, seems to be a promising solution. However, empirical research on anxiety from the CDST perspective is still limited in number.

In addition to exploring anxiety as a learners' internal characteristic, the CDST framework also necessitates careful examinations of the interaction between FL learners' psychology and situation-specific factors. Through the lens of CDST, a person is bound with his/her environment (Larsen-Freeman, 2015), and this person–context assembly facilitates changes and development across time (van Geert & Fischer, 2009). The context of this study is the online FL classroom in the coronavirus pandemic, which is a totally new context that no learners have experienced. In particular, traditional classrooms were

transformed into emergency online learning platforms (Hodges et al., 2020) without considering learners' preparation or readiness (Russell, 2020) in the online FL classroom setting. The nature of the online FL classroom setting would comprise various sources for anxiety, such as communication apprehension, fear of negative evaluation, and test anxiety because it involves plenty of distinctive interpersonal interaction and oral communication (Horwitz et al., 1986) specific to the online FL classroom setting. "Technophobia" is a case in point. Technophobia is "anxiety about a present or future interactions with computers or computer-related technology" (Rosen & Weil, 1992, p. 7). Although there have been several studies investigating learners' anxiety in the technology-enhanced learning environment (Anthony et al., 2000; Hwang et al., 2017), or the fluctuations of anxiety levels across the time (Li et al., 2020), according to the CDST framework, the observed phenomena in other (traditional) contexts might not be transferrable to this new, technology-enhanced learning context.

When learners' emotional factors interact with the new context, there might be unexpected effects emerging from this interaction—the *emergence* that's worth further exploration. This phenomenon can be illustrated by the metaphor called the "butterfly effect" in CDST, which asserts that a minor change at the initial stage of a learning process can potentially have a far-reaching impact on learners' progress, leading to large differences in the later stage (Dörnyei et al., 2015). In brief, the core themes of CDST, namely dynamism and emergence, and the roles of contexts necessitates the careful examination of the interaction between learners' psychology and specific situation, in which a minor change can also lead to a major variation eventually.

In response to the call for new approaches to research on anxiety, and in light of the importance to provide a context-sensitive account for the fluctuation of FL anxiety, this study draws on CDST and diachronically examines anxiety using both qualitative and quantitative lenses. This study is expected to shed light on the anxiety patterns of online FL learners in the pandemic period, and explore factors affecting their anxiety in a broader range, beyond the predetermined constructs from the questionnaires. As such, learners' anxiety is explored jointly and individually with both quantitative and qualitative methods, with the following guiding questions:

- Research Question 1: What are the developmental trajectories of learners' foreign language classroom anxiety in the emergency online language classroom?
- Research Question 2: What factors emerge from the emergency online classroom that affect the foreign language classroom anxiety?

Literature Review

Complex Dynamic Systems Theory

Systems are defined as "groups of entities or parts that function together" (de Bot et al., 2013, p. 200), while the term *Dynamic* highlights the continuous changes that a system undergoes due to internal and external forces. When being introduced into SLA research, CDST acknowledges the interaction between a language, its learners, and the language communities (de Bot et al., 2013). This theory also emphasizes the growth and decline of learners' language knowledge and psychology across their learning process.

As such, it has driven the research in SLA to be "situated and process-oriented," meaning that the characteristics of language learners' state of mind or knowledge are not stable, and are not independent of context. Instead, they interact with the context and constantly change during the process (Dewaele, 2012, p. 43). Each learner is considered an overarching, complex, and dynamic system, comprising various interrelated sub-systems and sub-factors.

The characteristics of CDST can be found in the seminal works by de Bot and Larsen-Freeman (2011, p. 9) and Larsen-Freeman (2015), some are: "complete interconnectedness", "nonlinearity in development", "feedback sensitivity/adaptation", "context-dependent", "dependence on internal and external resources", "constant change with chaotic variation", and "emergent properties", to name a few. On the whole, those characteristics emphasize that the distinctive feature of CDST is the interactions between sub-systems and sub-factors in a system that exert forces for changes. The change in one factor might exert forces for changes in other factors, which collectively leads to nonlinear changes of the whole system. The above account does not only acknowledge the interrelatedness and interactivity of a learner's internal characteristics but also considers the influence of the communities and environment on a language learner. As such, the change in the environment can also influence learners' individual characteristics (such as anxiety), which enables learners to reorganize themselves and gradually adapt themselves to the learning environment.

In this vein, the purpose of research from the CDST perspective is not to identify the specific factors that predict variation or cause-effect relations. They also do not study specific variable(s) individually because factors in the system are interconnected, and it is impossible to study anything apart from others (de Bot & Larsen-Freeman, 2011). Instead, this line of research only examines "patterns that emerge from interactions" (de Bot & Larsen-Freeman, 2011, p. 21). That is to say, CDST focuses on the interaction of factors involved in the observing process and the variation over the development process. As the number of factors involved is enormous but only some can be captured (de Bot et al., 2007, p. 14), this study puts anxiety to the epicentre. Particularly, its nonlinear change and its interactions with other factors are observed through the reorganization and adaptation of learners.

The theoretical premise of CDST offers a promising theory to observe the interaction between learners' levels of anxiety with the new learning context and other individuals (classmates and teachers), and how this affective factor fluctuates over the new learning environment (the emergency online course). First, CDST proponents do not see anxiety as an affect associated with fear (Dörnyei & Ryan, 2015, p. 117); rather, they see it as a complex and multifaceted construct. Likewise, CDST is expected to "be able to capture the multifaceted complexity of the SLA process" (Dörnyei et al., 2015, p. 3). Second, given that timescale is an important concern in second language development (de Bot, 2015b), it contributes a solution to the inconsistent results in L2 motivation research because previous studies only took snapshots of the effects at different phases of the behavioural process (MacIntyre & Serroul, 2015). From this perspective, measuring the levels of anxiety at different points of time can capture the fluctuations of this factor in a certain setting, namely an online classroom.

Foreign Language Anxiety

In the field of SLA, FL anxiety is considered to be a type of situation-specific anxiety, which was first conceptualized by a seminal work of Horwitz et al. (1986). From this perspective, Horwitz et al. (1986) defined FL anxiety as 'a distinct complex of self-perceptions, beliefs, feelings, and behaviours related to classroom language learning arising from the uniqueness of the language learning process' (p. 128). Research on FL anxiety has employed either qualitative methods (i.e. diary studies) or quantitative methods (i.e. FLCAS, Horwitz et al. (1986), which yield inconsistent results depending on the facets and instruments that researchers used in their studies (Ellis, 2019).

In general, studies on language anxiety have covered a wide range of topics. Since Horwitz et al. (1986) marked a turning point in research on anxiety by conceptualizing FL anxiety as a situation-specific type of anxiety (Dörnyei & Ryan, 2015), there have been numerous studies investigating the role of this language learners' affects in different contexts (Dewaele & Al-Saraj, 2015; Lu & Liu, 2011). Specifically, they focused on the sources of this factor and its impacts on learners' language levels holistically or in individual language skills, namely speaking, reading, or writing (Cheng et al., 1999; Dewaele, 2007; Horwitz, 2001; Huang, 2018; Yan & Horwitz, 2008; Zhang, 2019). Moreover, scholars also attempted to position anxiety on the learning progress: whether this affective factor is the *cause* or the *result* of poor achievement. This line of research was featured by the series of works by Sparks and his colleagues (Sparks & Ganschow, 1991; Sparks & Ganschow, 1995; Sparks et al., 2018; Sparks et al., 2019). Despite the long debates without consensus, MacIntyre and Gardner (1991) argued that anxiety could emerge at different stages of the learning process. It thus can be the cause and the result of poor academic achievement. In all, regardless of which perspective that anxiety was investigated, or which roles it was assigned in the learning process, the most consistent finding in this body of research is that "higher levels of language anxiety are associated with lower levels of language achievement" (MacIntyre & Gregersen, 2012, p. 103). As such, it is still one of the epicentres in the research on the psychology of language learners.

Besides researching FL anxiety in the traditional language classroom, more scholars are interested in exploring this affective factor in the technology-enhanced language classroom due to the increasing popularity of technology. Generally, compared with the non-technology settings, the empirical evidence of anxiety in the technology-enhanced language classroom is scarcer.

FL Anxiety in Technology-Enhanced Language Classrooms

Research in the technology-related paradigm mainly focuses on (1) the comparison between conventional classroom settings and the technology-embedded settings; and (2) the introduction of new technology to the language classroom. As regards the first theme, Baralt and Gurzynski-Weiss (2011) compared the learners' state anxiety in Computer-mediated communication versus traditional face-to-face communication, using both quantitative and qualitative instruments. Specifically, twenty-five participants were invited to do two information-gap tasks in both modes. Findings from the quantitative instrument, namely Foreign Language State Anxiety Questionnaire, yielded no significant difference between the two modes. The qualitative analysis revealed that learners felt more comfortable with face-to-face communication, whereas their perception

of new technological teaching modes varied. In the same vein, in a mixed-methods study, Çapan (2020) integrated digital storytelling (DST) into the language classroom, then investigated its impacts on learners' writing anxiety and attitudes, as well as the effects of learners' engagement in digital storytelling on writing errors. Compared with their counterparts who wrote stories on paper, participants who used DST reported lower writing anxiety levels, more positive attitudes towards foreign language writing, and fewer mistakes in their written stories. In terms of the second theme on the effects of innovative educational technology in the language classroom, taken anxiety as a focal interest, while Shams (2005) used the computer-aided drills, Ataiefar and Sadighi (2017) introduced a voice recording software for learners to improve their pronunciation competence. Results revealed that participants in both studies felt less anxious when they practised with the computers. The former proved the benefits of self-paced practice and learners' autonomy in operating the system, while the latter raised some concerns about the possible harms to students' pronunciation. The technology-enhanced language classroom was also conducted in the virtual environment with the adaptation of gamification and chatrooms (Grant et al., 2018; Hwang et al., 2017). To sum up, although Baralt and Gurzynski-Weiss (2011)'s study yielded no significant difference between the two learning modes, other studies generally reported further language development for those who studied in the technology-enhanced language classroom (albeit to different extents) and a lower level of anxiety.

On the whole, this body of research mainly captured anxiety at one or two phases in their procedure, which produced inconsistent results. They also showed that anxiety seems to be the most uncontrollable factor in learners' psychology, exhibited by the unpredictable quantitative results and unexpectedly emerging qualitative findings.

Considering the complex and cyclical relationship between learners' abilities, academic achievement, learning environment, and anxiety, Ellis (2004) suggested investigating anxiety with a dynamic model, which might unfold the interaction between "cognitive abilities" and the "propensity for anxiety" that eventually contribute to the L2 learning success (p. 540). Accordingly, there has been an increasing number of studies exploring anxiety from the Complex Dynamic System Theory lens, which provides a comprehensive theoretical framework to examine the interconnectedness and interaction of various factors in the same system (de Bot et al., 2013).

Foreign Language Anxiety from CDST Perspective

In line with the growing influence of CDST in SLA research, there has been a new line emerging in the literature, entitled 'anxiety and idiodynamic variation' (Dörnyei & Ryan, 2015, p. 178). Research in this avenue aims to investigate the fluctuation of anxiety across the predetermined timescales and examine which factor may influence this fluctuation.

Innovative research methodologies were applied to investigate the fluctuation of anxiety levels that participants encountered. Piniel and Csizér (2015) explored the variation of anxiety levels and self-efficacy in a writing course over the course of one semester. Interestingly, Gregersen et al. (2014) proposed an innovative idiodynamic method, which triggered the moment-by-moment emotional variation. With the assistance of the heart rate monitor, Gregersen et al. (2014) investigated real-time anxiety of six teacher candidates while they were making their classroom presentations.

Regardless of the different timescales and instruments, results of both studies revealed fluctuations of anxiety were affected by various interacting factors such as learning experience, level of preparation, planning, rehearsal, or task types.

Studies in this paradigm also attempted to investigate the relationship between FL anxiety and other social factors. Dewaele and Al-Saraj (2013) looked at the correlation between foreign language (classroom) anxiety (FLCA) and perfectionism in three groups of learners who had diverse age, educational and linguistic backgrounds. In a similar vein, King and Smith (2017) designed a mixed-method study to investigate social factors that influenced the FLCA of English learners in Japan. Results from both studies showed a different level of correlation between FLCA and various interconnected factors that interacted with each other at different levels (e.g., individual-level and environmental level).

In one of the very scarce studies targeting the fluctuation of anxiety in a technology-enhanced learning environment, Li et al. (2020) explored the change in learners' anxiety in the mobile-assisted language classroom when they experience learning with a mobile application named Rain Classroom in ten weeks. Quantitative and qualitative data analysis showed a general decrease in levels of anxiety across the examined period. It also revealed a complex propensity for anxiety. A highlight of this study is the conclusion that the portrait of the variation of language anxiety has yet to be completed.

Across the context, research focus, or timescales, studies from the CDST perspective witnessed emerging causes of anxiety from the interactions of different factors. Despite the widely accepted attraction of this research line (MacIntyre, 2017), studies on the fluctuation of learners' affects in the traditional language classroom is still in its infancy, let alone the digital learning environment. Moreover, under the CDST framework, the emergency online learning environment caused by the pandemic and data from different timescales can possibly yield unexpected results (de Bot, 2015b). Taking all aforementioned factors into consideration, this study aims at filling the research gap by capturing the fluctuations and variations of learners' anxiety in a synchronous online language classroom offered during the lockdown periods due to the coronavirus pandemic.

Method

Context of the Study

This study was conducted during the lockdown period caused by the pandemic in a university located in the central region of Vietnam. Specifically, students were told to stay at home and learn via online learning platforms (Moodle) and video conference tools (Microsoft Teams). Moodle was used as a platform for teachers to upload materials, create assignments, and students may do some asynchronous learning activities such as submitting assignments or asking questions in the forum. Microsoft Teams was used to conduct synchronous online meetings weekly. Each meeting lasted three and a half hours.
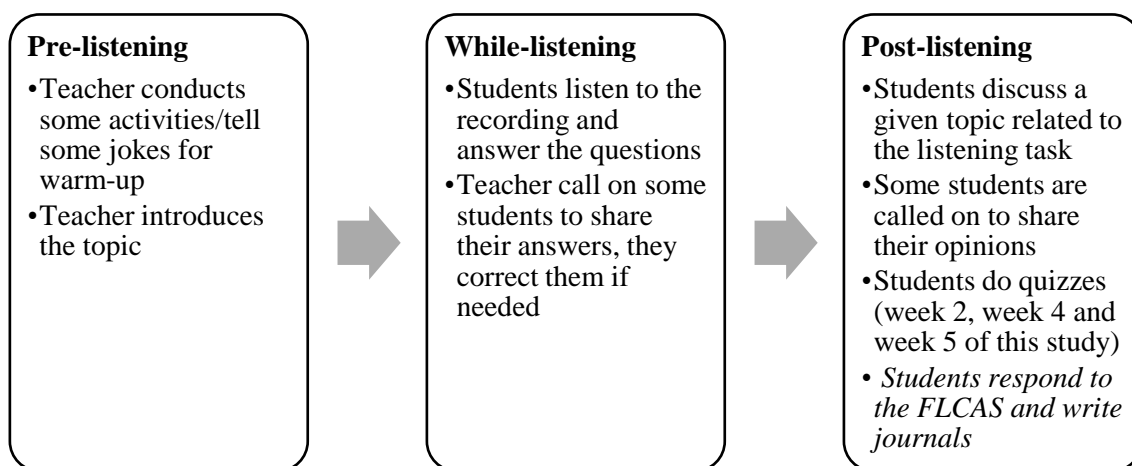
For the school to prepare for the emergency online learning, the semester was delayed up to two weeks for the school to set up the system and create accounts for students. Within that period, students were requested to do exercises via asynchronous learning platform (Moodle) by themselves. Although the university was located in a

developed city, its students were mostly from other provinces. Therefore, the facility conditions such as the Internet connection or learning devices (i.e. laptops or smartphones) of students may vary.

The data for this study were collected from two classes on intensive listening for English-majored students, instructed by the same instructor to lessen the heterogeneity. Moreover, data were collected primarily from the synchronous online meetings because this mode required more interactions between teachers and participants. In this course, the instructor trained students to familiarize themselves with various forms of listening exercises. At the end of the course, learners were expected to reach level C1 of the Common European Framework of Reference (CEFR). The meetings complied with a typical language lesson plan, including pre-listening, while-listening, and post-listening. The procedure of the meeting is illustrated in Figure 1. The time allotted for each activity depends on the pace of the class.

Figure 1
The procedure of a Synchronous Meeting

Pre-listening
- Teacher conducts some activities/tell some jokes for warm-up
- Teacher introduces the topic

While-listening
- Students listen to the recording and answer the questions
- Teacher call on some students to share their answers, they correct them if needed

Post-listening
- Students discuss a given topic related to the listening task
- Some students are called on to share their opinions
- Students do quizzes (week 2, week 4 and week 5 of this study)
- *Students respond to the FLCAS and write journals*

Participants

Originally, there were 87 English-majored students (seven male and eighty female students) from two classes who agreed to take part in this study. They were all third-year students enrolling in a required course on intensive English listening skills. They were all from 20 to 21 years old, whose first language was homogenously Vietnamese. These students all had seven years of learning English consecutively in general education, then they proceeded to major in English at college. In total, they have at least ten years of learning English, and they all passed an examination in the form of B2: First English test as a prerequisite for the current course. The focused skill of this module was listening. However, due to the integrated teaching practice, the instructor also adopted speaking skills activities. For five weeks, some of them did not show up for the online meetings, or they responded to the questionnaires incompletely. Therefore, at the end of the data collection and data cleaning process, there were twenty-one students (two male and nineteen female students) who attended all meetings and responded to all items in each of the five questionnaires.

Instruments

As the focus of this class was on communicative English skills, the researcher employed the Foreign Language Classroom Anxiety Scale (FLCAS), which also emphasizes anxiety in oral communication. It comprises thirty-three 5-point-Likert-scale items, with responses ranging from "strongly disagree" to "strongly agree". As aforementioned in the literature review, this is the most widely used questionnaire in the language classroom (Ortega, 2013) with high reliability, with a coefficient of .83 for its test-retest reliability (Horwitz, 1986). The author only inserted the word "online" into some statements to remind learners of the current classroom setting, so that they can be able to stay focused on reflecting their emotions in an online meeting (See Appendix). The FLCAS was administered in five weeks. Cronbach's alpha was used to determine the internal consistency of the weekly FLCAS and its components. The results showed a relatively high level of internal consistency, with most α values greater than 0.7, as stated in Table 1. Though a few α values of the subscales were around 0.6, they could be regarded as moderately reliable (Hinton et al., 2014).

Table 1
The reliability of the FLCAS questionnaires

	FLCAS (33 items)	Communication Apprehension (11 items)	Fear of Negative Evaluation (7 items)	Test Anxiety (15 items)
Week 1	0.89	0.75	0.69	0.73
Week 2	0.88	0.79	0.63	0.69
Week 3	0.90	0.83	0.78	0.70
Week 4	0.91	0.85	0.75	0.72
Week 5	0.87	0.82	0.60	0.72

As anxiety is a non-ergodic psychological construct, it requires the combination of both quantitative and qualitative methods to explore comprehensively (Ellis, 2004; Newman & Benz, 1998). The data collection, therefore, included a second method named 'study journal', with some prompt questions for learners to reflect on their current learning experience to get in-depth information. Students were encouraged to voluntarily answer the questions in either English or Vietnamese. As they were proficient English users, all of them opted for English in their responses. The entire survey was distributed online via Qualtrics. Finally, 105 complete journals were collected after five weeks. As the data collection was conducted voluntarily, if they did not want to answer a particular question, they may write "no answer" or leave it blank.

To triangulate the quantitative and qualitative data, classroom observations via video recordings were also included. As part of the school's administration protocol, lecturers were required to record all of their online meetings and stored them in the database. The researcher also asked for the instructor and students' consent to use the videos for research purposes only.

Procedure

Prior to the course commencement, students were requested to install Microsoft Teams and explore it by themselves, with the instructing videos provided by the school. At the first online meeting, students were given one hour to familiarize themselves with

the platform and the tools that teachers employed. They then had an introduction to the course, and the main lesson content was conveyed in approximately one and a half hours, almost fifty per cent of the total allocated meeting time. At the end of the first meeting, students were informed of the project and asked for consent and commitment to participate in the project. Specifically, they were invited to voluntarily fill in the questionnaires as well as complete their study journals at the end of each meeting. In addition, they were advised that they can withdraw from the study at any time without any impact on their academic results. To encourage honest responses from students, they were assured that their feedbacks would not be revealed to their instructor, and all of their information would be kept confidential. Finally, they were informed that the video recordings of their meetings would be used for classroom observation. Afterward, students reacted to the first form of their own accord.

The following meetings were conducted as scheduled, which meant they spent fully three and a half hours on the lesson. The data were collected weekly, at the end of each three-hour meeting, to trigger their levels of anxiety when their emotions were still fresh. The weekly responses were collected in five weeks until students went back to conventional face-to-face meetings. The procedure of the experiment and data collection is illustrated in Figure 2.

Figure 2

Procedures of the Synchronous meetings and Data Collection
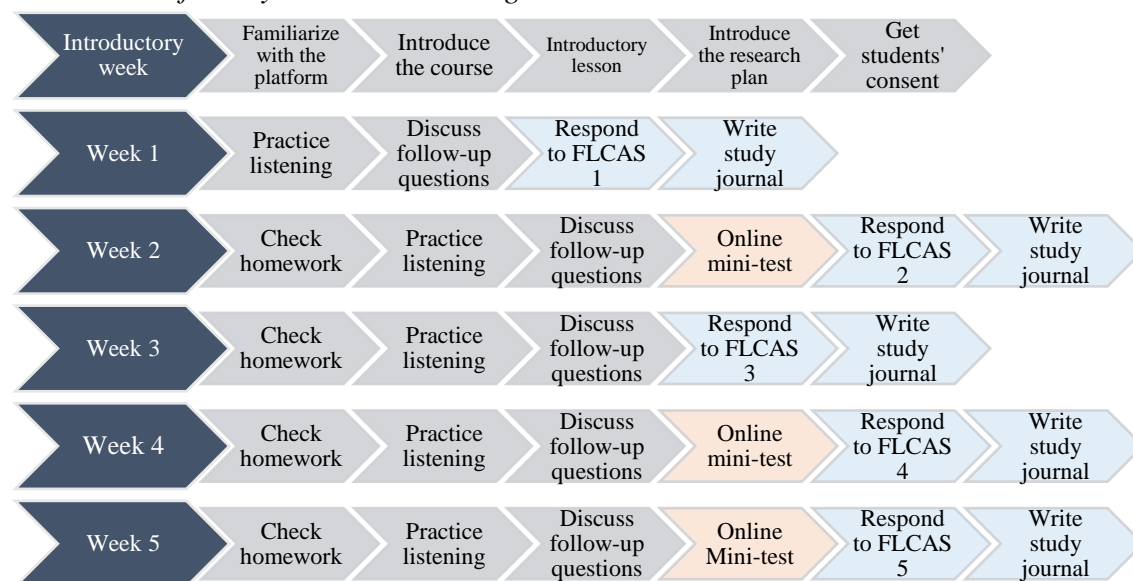
Data Analysis

The data of this study consisted of two parts: the quantitative part derived from the FLCAS and the qualitative part taken from the written study journal. They are triangulated by the recordings of the online meetings as part of the school policy for online teaching. As guided by previous studies (Alrabai, 2014; Russell, 2020), the researcher summed up 33 statements of FLCAS to get the anxiety score for each response, with one point for the "strongly disagree" anchor, and five points for the "strongly agree" anchor. The scores for negatively worded items were reversely coded and computed. Complying

with He (2018), learners were divided into four groups, namely the low, moderately low, moderately high, and high anxiety level groups using the percentiles (25th, 50th, and 75th) as cut-off points. First, the researcher ran a descriptive analysis to see the pattern in learners' *fluctuation* of anxiety levels. As anxiety is usually not normally distributed because learners usually report a moderately high to a high level of anxiety (Alrabai, 2014), the Repeated Measures ANOVA was replaced by a non-parametric test, i.e. Friedman test, to see if there were statistically significant differences in terms of weekly anxiety level across the board.

Data analysis of the study journals was grounded in thematic analysis, a strategy commonly used for qualitative research in social sciences (Creswell, 2013). Initially, all the responses were carefully read for coding. Then, the researcher arranged and reduced the identified codes until saturation was reached. At the first level of analysis, the researcher analysed the emergent themes based on the three main sources of FLCAS (Horwitz et al., 1986). Specifically, she drew on the *communication apprehension* to see how oral classroom activities affected the participants. The *fear of negative evaluation* and *test anxiety* were relied on to analyse how their emotions were influenced by the teacher's corrective feedback in response to their answers. The second level was to relate the themes to the framework of DST, namely 'emergence' and 'dynamism'. That is, the author drew on dynamism to focus on the group of learners whose anxiety shifted from one level to another. Likewise, 'emergence' was used to highlight the emerging factors in the emergency online language classroom that affected learners' psychological states.

Results

The Fluctuation of Students' Levels of Language Classroom Anxiety over the Remote Learning Period

The data from FLCAS collected in five weeks was analysed quantitatively to explore how learners' levels of anxiety changed over the observed time. Results from the descriptive analyses of five weeks (Table 2) showed that learners generally reported a moderately high level of anxiety (Mean = 104.69, SD=14.26), which complied with other research on FL classroom anxiety (Alrabai, 2014). The respondents were then classified into four groups based on the sums of their weekly FLCAS scores, namely low, moderately low, moderately high, and high anxiety level groups, with the cut-off points, were the 25th, 50th and 75th percentiles. This grouping was used to investigate the group developmental trajectories of anxiety, and for the qualitative data analysis later. Results from the categorization also reflected that at the beginning, most learners reported a moderately high to a high level of anxiety (N=13), but this number tended to decrease in the last week (N=9), though it underwent some fluctuation over the period (Table 3). In addition, three subscales of FLCAS were separately computed to explore the fluctuating patterns.

Table 2
Descriptive Analysis of Weekly Level of Anxiety

| | Week 1 Mean (SD) | Week 2 Mean (SD) | Week 3 Mean (SD) | Week 4 Mean (SD) | Week 5 Mean (SD) | Total Mean (SD) | Percentile | | |
							25th	50th	75th
FLCAS	107.57 (14.90)	103.62 (14.76)	102.76 (14.22)	105.67 (15.20)	103.81 (13.00)	104.69 (14.26)	94.5	106	115
CA	35.71 (5.68)	34.90 (5.96)	34.38 (5.69)	35.24 (6.24)	34.90 (5.66)		31.5	35	38.5
FN	23.67 (4.03)	22.00 (3.97)	21.81 (4.38)	22.81 (4.08)	21.90 (3.51)		19	23	26
TA	48.19 (6.60)	46.71 (6.51)	46.57 (5.65)	47.62 (6.24)	47.00 (6.05)		43	46	51

Table 3
Number of Students in each Group according to the Levels of General Weekly Anxiety

| Level of anxiety | WEEK | | | | |
	Week 1	Week 2	Week 3	Week 4	Week 5
Low	3	6	6	5	6
Moderately low	5	4	8	4	6
Moderately high	10	6	3	6	5
High	3	5	4	6	4

Friedman test was applied to explore if the weekly anxiety significantly differed from one week to another. Results revealed that though there were variations in learners' levels of anxiety among observed weeks, there was not a statistically significant difference in levels of anxiety experienced by language learners in the emergent remote language learning course, $\chi 2(4) = 2.217$, $p = 0.696$. As such, it was unnecessary to conduct the post hoc Wilcoxon signed-rank test. Looking into the three major types of FL classroom anxiety, namely *communication apprehension, fear of negative evaluation,* and *test anxiety*, results also revealed variations in the levels of each construct, and those variations were in line with the overall anxiety due to the specific demands of each online class. Similar to the general FLCAS, results from Friedman tests on three subscales of FLCAS did not show any statistically significant difference, with $\chi^2_{CA}(4) = 1.939$, $p_{CA} = 0.747$, $\chi^2_{FNE}(4) = 5.942$, $p_{FNA} = 0.204$, and $\chi^2_{TA}(4) = 0.776$, $p_{TA} = 0.942$. The fluctuations of these three constructs and the general FLCAS are illustrated in Figure 3. It is worth noting that the scores of the subscales accorded to the number of items allocated to a certain construct. Hence, they do not reflect their rank in the FLCAS. Generally speaking, learners still felt moderately highly anxious at the end of the remote learning system. This observed phenomenon leads us to the question regarding factors that influenced this result.

Figure 3

Fluctuations of Weekly FLCAS, Communication Apprehension, Fear of Negative Evaluation and Test Anxiety
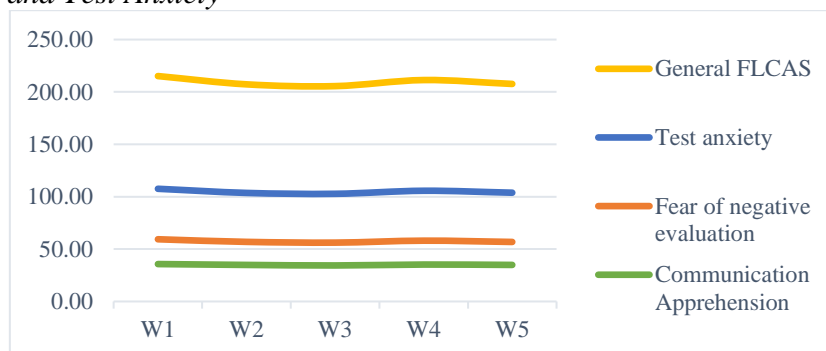
In addition to group patterns, the dynamic change of each individual was also observed. Figure 4 illustrates the fluctuation of each learner's anxiety level. Unlike the slight fluctuation in group patterns, there were disparities in anxiety trajectories of individual learners. In general, while the developmental trajectories of some learners stayed more or less stable across the surveyed period, those of other participants were chaotic.

Figure 4

Fluctuations of Individual Weekly Anxiety
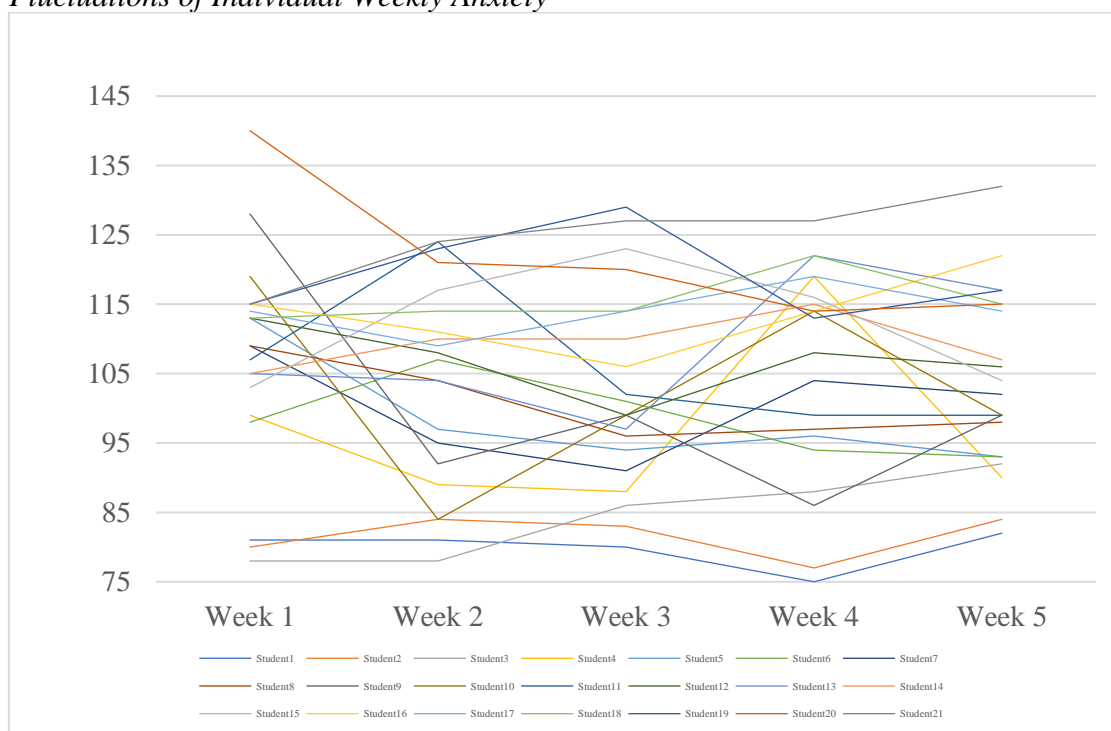
To investigate the fluctuation of anxiety in each group, students were also classified into four clusters based on the anxiety level percentiles (Table 2). Besides the trajectories of the general weekly anxiety, the author also observed the clusters' fluctuations in three subscales to have a closer look at the affecting factors. From the

CDST perspective, which emphasizes the impact of initial condition on the development, the author used the componential anxiety level of Week 1 to classify learners into four groups, then observed how the anxiety of learners in a particular group changed over the time. Generally speaking, the anxiety of those who initially reported a low anxiety level stayed fairly stable. Meanwhile, the group of highly anxious learners at the beginning generally felt less worried from week 2 henceforth, despite encountering some changes in the following weeks. Other groups of learners, who encountered moderately low and moderately high levels of componential anxiety, had great variations among observed weeks. This pattern was commonly found in the general weekly anxiety level (Figure 5a) as well as in the subscales.
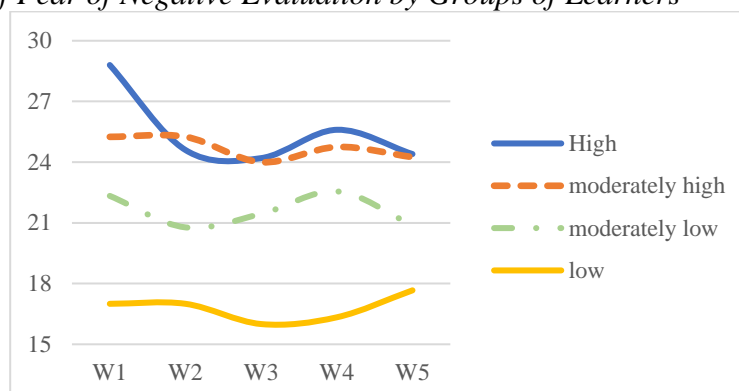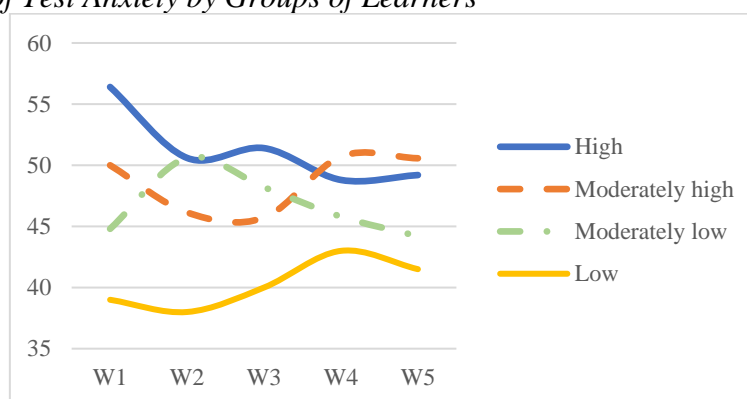
Figure 5a
Fluctuations of General Weekly FLCA by Groups of Learners
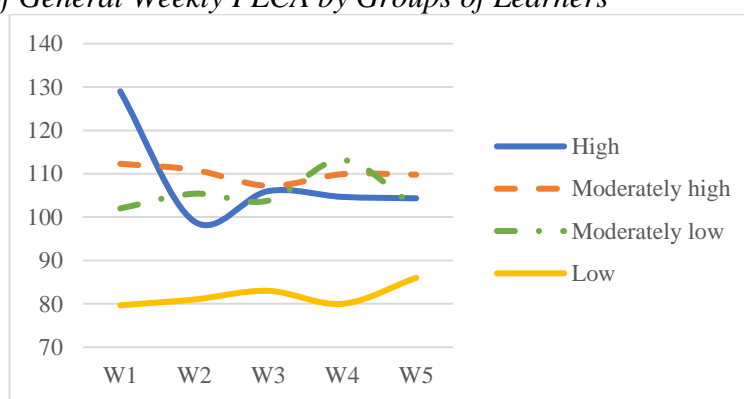
Figure 5b
Fluctuations of Communication Apprehension by Groups of Learners

Figure 5c
Fluctuations of Fear of Negative Evaluation by Groups of Learners

Figure 5d
Fluctuations of Test Anxiety by Groups of Learners

Regarding the communication nervousness, only the least anxious group of students remained fairly stable across the period, while other groups encountered variations to a varying extent before reaching the moderately high level at the end of the remote learning time. Noticeably, students in the moderately low group reported a high fear of communication in week 4 (Figure 5b). In addition, the fear of being corrected in front of the class stayed with students throughout the course because it is bound with classroom activities: teachers frequently asked them to answer the questions and give their opinions after group discussions. In week 4, some learners increased their anxiety to the upper level because many students were absent from the online meeting of this week. Thus, those who attended were asked to answer questions more frequently, and they experienced discomfort more often (Figure 5c). The test anxiety was high initially, as lots of students felt quite worried about the examination. This concern was improved a little, but it tended to increase at the end of the observed period as it was also the time for the mid-term examination (Figure 5d).

Factors emerging from the course that affect learners' anxiety

Qualitative data was obtained from the students' study journals, consisting of eight open-ended questions. Students were encouraged to reflect on their emotions, impressions, and suggestions right after each learning session.

Students' Perceived Advantages and Disadvantages of Online Language Classroom

At first sight, those who experienced low or moderately low levels of anxiety frequently used such keywords as "comfortable", "as usual", "pleasure" or "interesting" after doing the online course, whilst the students in the other two groups (moderately high or high anxiety level) reported that they felt "tired", "exhausted", "sleepy", and "dissatisfied". Generally speaking, at the beginning of the course, students were highly anxious because they did not know how the online course would be, or what they were expected to do during the course. In the end, regardless of anxiety due to various reasons, all students felt that they had some improvement in their language skills at the end of the emergency remote learning period.

In relation to the elements of the remote learning class that they perceived positively, most students were satisfied with the teacher's sense of humour, friendliness and the way she carefully prepared the lesson. That teacher's teaching attitude was confirmed by classroom observation via video recordings, as she encouraged students to speak up, or told some jokes occasionally. She also tried to get students involved in the discussions by calling their names and gave compliments on their answers, and eventually elaborated the answers to the questions thoroughly. Moreover, they felt that learning from home was convenient as they could not be late for class due to travelling, and it offered them to study in a more comfortable condition. In addition, the online learning platform enabled teachers to share supporting materials to assist their learning process more promptly and efficiently than in the face-to-face classroom.

Concerning the features that negatively affected their learning experience, complaints on the unstable internet connection existed in all sessions because it inhibited them from following the lectures. Thus, they missed some parts of the lectures and could not understand the lesson quite well. Similarly, most students disliked the noise from other students' speakers, and the mechanism of the online meetings prevented learners from having good teamwork or group discussions because the teachers could not observe all groups simultaneously. The assessment was another unfavourable part of online learning because some students did not turn on their camera (deliberately or unintentionally), or they may take internet connection or defected computer accessories as excuses for their absence. Consequently, attendance or participation cannot be evaluated fairly. Students were also fatigued by the duration of the online meeting because they had to look at the computer's screen for a long time.

Factors that Affected Learners' Anxiety Levels

When analysing factors that affected learners' anxiety in the remote language classroom in the pandemic, the researcher looked at factors by groups of anxiety levels, especially focused on those whose anxiety between two weeks moved to another level. The qualitative data are thematically presented according to three main sources of FL classroom anxiety under FLCAS, accompanied by other emerging factors.

Communication Apprehension. Overall, most students were afraid of speaking-related activities in class such as "speaking", "discussion", or "answering question(s)". This source of fear was found in 97 out of 105 study journals. Particularly, regardless of the anxiety levels recorded, students expressed that they felt uncomfortable during

discussions in class. While some did not give further details of their answers, other explained that this anxiety comes from the unfamiliarity with the characteristic of online conferences, or the technical issues. Typically, students complained about the difficulties in peer-interactions or their inattention:

"I don't like discussion, because it's difficult to interact with my classmates in online meeting",

"…I'm not the one who are really into group work. If teacher is not in our group, I will not say anything".

Likewise, others reported technical issues such as:

"Actually, I'm most worried about the discussion [b]ecause it's hard to talk to each other over the internet. If we discuss it together, we'll have to turn on the microphone. So there are a lot of noise", or "…sometimes after teacher [created] breakout rooms, I had no partner to work with".

"Answering questions" was also a popular response when students were asked about the particular part(s) of the online meetings that worried them the most. For instance, some students reported that:

"… I [was] still anxious when teacher asked me to speak when I didn't prepare."

"… I [got] nervous when the teacher called my name and asked me to answer the question."

"I got anxious when not being able to answer when the teacher asked something about the lesson."

"…I am afraid that the other students in [the] online course will laugh at me when I speak English."

From the excerpts above, it can be seen that students were reluctant to do those activities because they were afraid of losing face in case they were unable to give incorrect answers. This finding is also related to the fear of negative evaluation.

Fear of negative evaluation. The second most popular source of anxiety was their performance, reflected by the number of correct answers in their homework and during the online lesson, and the results of online quizzes as a form of formative assessment, and the teacher immediately reveal the keys after the mini-tests. When bridging this source with the afore-mentioned communication apprehension, it can be inferred that the fear of having incorrect answers underpinned the unwillingness to speak or answer the questions in class. For example, some students explicitly explained why they were worried when they spoke in class:

"It's hard to develop the right answer from audio."

"I worried when I answer [the] questions. Although I can find the evidence, I still chose wrong answers."

"I felt most worried to answer [the] questions that I don't know the answers."

Specifically, some of those participants were anxious because of the low rate of correct answers during the meetings, as they said:

"…Maybe [the] exercises today are not easy for me, and I don't do them very well."

"I made mistakes in my online test and got low marks."

The fear of getting incorrect answers was also in relation to the assessment of the course, as some participants reported that they did not feel good due to "…bad results of the tests", or because "…I worry that I will not have good result[s]", or some worried that they might have missed some tasks because of being unable to go online. Conversely, those who got "…more correct answers than last week's lesson" stayed at the same level if they were originally less anxious learners, or even jumped to a lower level of anxiety.

In short, the fear of negative evaluation did not only affect learners' anxiety, but also exerted forces for test anxiety and general anxiety to change from one to another level, as observed from learners whose level of anxiety moved from moderately low to moderately high, or from moderately high to high.

Test anxiety. Testing and assessment have always been one of the main concerns of learners. For those respondents, even the students with a low level of anxiety worried about the online quizzes, the mid-term and final term examinations, and the teacher's assessment of their performance. This kind of worry was found from the first week to the fifth week of the data collection. The concern about the mid-term exam and the final exam was found in study journals every week. Very often in week 4 and week 5, students frequently foresaw that those online practices would not be adequate for their examination, and they felt that they "…wouldn't be ready for the exam". Other worried that "the mid-term exam and the final exam could not be in good condition to be prepared and be taken place because of the internet quality". Seriously, several respondents even explicitly spelled out that they would fail the examinations if they continued to learn online. In addition, the online mini-tests mentioned above seemed to intensify students' anxiety, as students frequently mentioned their concerns or even disappointments related to mini-tests' results. Conversely, several students reported that their anxiety was improved when they got good scores in the quizzes, which was by the fear of negative evaluation. From the video recording of week 5, the mini-tests were also a reason for the unusual number of absentees in week 4. When the instructor asked them about their absence at the beginning of the fifth meeting, they explained that they felt unready for the quizzes. Hence, they chose to skip class as an avoidance.

Other factors. Given that FLCA is composed of various sources inherently in the FL classroom, other contributing factors beyond the construct of FLCAS leading to the change in learners' anxiety should also be included. The complexity of the lesson and task demands also exerted pressure on students, thus made them feel anxious. The difficulties were due to the speed of the listening exercises, the quality of the sound, and

the number of assignments and homework they were given after each lesson. Some were anxious because they felt that they could not "…keep up with the lessons" because the lessons were too fast, or they missed some parts due to the Internet disconnection, then they "…. Could not understand what the teacher was saying." Consequently, it aroused fear of being "left behind" compared with other students. Students also acknowledged that the lessons got "more and more difficult" in the following weeks, which made their anxiety remained more or less stable although they were more accustomed to the system. The deadline for the assignments also irritated them and made them felt that "…there are more things to do than normal class". Sometimes, they felt overwhelmed by the workload, especially when they had to attend two courses within one day.

As expected, the remote learning period also had some distractions. Some students reported that they could not concentrate on the lesson because of their household chores, or they felt too comfortable at home to stay focused. As a result, they skipped some classes due to their laziness or other unrelated duties assigned by their parents.

Learners' Strategies to Cope with Anxiety and Suggestions for Teachers

The change in learners' development was also manifested by their self-regulated learning strategies. In general, students were all well-aware of their weaknesses and had some improvement plans. Specifically, while this question was primarily omitted in the first and second weeks, students started to identify what they should do in response to the situation from the third week onwards. Take week 5 as an example. Despite several "no answer" responses, half of the respondents knew that they should practise more on their own. Noticeably, a small group of students specified that they should "learn more vocabulary", "learn how to take notes efficiently", "learn more about different kind[s] of knowledge such as arts, science, history, or literature", "prepare for my lesson more carefully before class", and "ask the teacher what I don't understand" to "overcome the fear".

Concerning the suggestions for the instructor, although they were all satisfied with the teacher, they still expected the teacher to have some improvement in her teaching practice. For instance, they hoped her to give a longer break time every fifty minutes (which is relevant to one learning period in their college). In addition, they expected the teacher to reduce the amount of homework with deadlines to lift the pressure. Instead, the teacher should give them more practice exercises (without submissions or deadlines) so that they can be more prepared for the exams. Moreover, the instructor was also suggested to spend more time on less competent students and slow down her teaching pace, by which she can elaborate more on the lessons.

Discussion

While the results from FLCAS reflected the *dynamics* of learners' anxiety over the emergency online learning period, their study journals helped trigger *emerging* causes of the recorded patterns. Overall, the data witnessed the fluctuations and variations in individual responses among five weeks, although the holistic levels of anxiety did not reduce significantly at the end of the observed time. The difference between group and individual patterns intensified the need to investigate language learner's psychology from

various perspectives to avoid ergodicity (Lowie & Verspoor, 2019). In addition, the nonlinearity of individual trajectories empirically evidenced the sensitiveness of the learner's emotional state to the changes of the learning environment (Larsen-Freeman, 2015). Furthermore, the verbal responses also revealed the interrelatedness of three constructs of FLCAS, namely communication apprehension, fear of negative evaluation, and test anxiety, as well as the interrelation of numerous factors in the online language classroom setting.

Factors Affected Learners' Anxiety Dynamics Under the FLCAS Framework

Although the data analysis documented that the holistic anxiety levels had a propensity to decrease, this reduction was not statistically significant. This phenomenon can be explained by the major sources of anxiety under the FLCAS framework. Since the observed classes focused on communicative skills (e.g. listening skills and oral discussions), students were anxious about speaking in class most of the time as they had to switch back and forth from peer discussions to answering questions in front of the whole class, which contributed to the *communication apprehension.* Only those who had low-level anxiety at the beginning stayed at the same level at the end of the course, whilst students of other levels eventually got to the "moderately-high". Furthermore, the instructor adopted mini-quizzes to check their progress, which aroused their *test anxiety* and intensified their pressure. For this aspect, even students whose anxiety levels were initially low had a tendency to increase when approaching the time for mid-term examination.

In general, to those students, the *fear of negative evaluation* was a hierarchical factor that covered two afore-sketched factors as they mostly worried about feedbacks from peers and teachers. Specifically, when they were asked to give their opinions or answers orally, they were afraid that they would be laughed at by other students, or they would have answers that were different from the teacher's feedback. This result was in line with Liu and Jackson (2008), highlighting that fear of making mistakes, teachers' corrective feedback, and speaking in front of the whole class critically led to high FL anxiety. The relatively slight fluctuation of anxiety was in alignment with the task types and task demands, existing in all five meetings, which was also recorded in Kruk (2018). The interrelation between the three sources of anxiety once again confirmed the interconnection of three constructs of FLCAS (Horwitz, 2017) and reinforced the "feedback sensitivity/adaptation" attribute of learners and the interactions between various factors at the individual level and contextual level in the language classroom from the CDST perspectives (King & Smith, 2017; Larsen-Freeman, 2015).

Emerging Sources of Anxiety in the Emergency Online FL Classrooms

The emerging factor that pervaded all changes in anxiety level was *readiness*. The *readiness* was related to all human and nonhuman agents involved in an online classroom, including students, teachers, and facilities.

Regarding the nonhuman factor, the availability of equipment and the stability of internet connection were crucial reasons that affected the increase or the decrease of anxiety level across the period. For instance, students were mostly satisfied with the lesson if the internet of that day was not disconnected, as it helped them follow the

listening lessons, peer discussions, and lectures smoothly, and vice versa. In all, the internet connection was the most popular complaint that appeared in most study journals from the first to the last week. In fact, this is in line with Hodges et al. (2020), who suggested that effective online education involved an *ecosystem* of learner supports, comprising lots of infrastructures that took time to identify and build.

When it comes to human agents, students were predictably unprepared for the lesson, which was exhibited by their perceptions towards the new learning experience. Specifically, in the first week, the discomfort was caused by the unfamiliarity with the system, and this anxiety reduced in the last week, with explicit claims that they were accustomed to the online learning platform. However, based on students' responses, the familiarity with the system cannot compensate for the lack of facilities and the escalating complexity of the lessons. Moving towards the end of the remote learning period, the negative attitude towards the novel learning environment was gradually replaced by the complaints on increasingly difficult exercises. This was also accompanied by the concerns that they might not be *ready* for the upcoming examinations because of the lower-than-required knowledge and skills, thus intensified their anxiety.

Another subordinating factor emerging from learners' readiness is online learners' autonomy. In normal situations, students were allowed to choose the mode of study (e.g. online or face-to-face). In most cases, students go for online courses to avoid inter-personal interactions in the conventional language classroom (Russell, 2020). Conversely, when they were forced to do a synchronous remote learning class, and they were still required to orally communicate with their peers and teachers, students felt anxious due to the communicative language tasks and the instructional technologies. The classroom anxiety was intensified as this mode was not their choice in the first place (Pichette, 2009). Moreover, some learners were not successful online learners because they needed physical and psychological adjacency to their peers (Russell & Murphy-Judy, 2020), whilst others lacked self-discipline and responsibility; thus, they failed to manage their personal or family-related tasks to join the scheduled online meetings (Russell, 2020). Similarly, as reflected by the study journals, although students disliked the timed homework and weekly quizzes, they still requested the teacher to give more exercises for further practice. We can, therefore, see that they wanted to be more autonomous and preferred self-paced practice rather than being controlled by the instructor. Thus, in the situation when learners have no choice but online learning, especially adult learners like the participants of this study, the instruction should offer both synchronous and asynchronous learning modes, and learners should be empowered more agency to select their preferred instructional delivery mode and partially decide their pace of learning, so that they can adapt themselves to the new learning experience (Hodges et al., 2020; Russell, 2020).

Teacher's readiness for online teaching, reflected by the instruction, was a factor that moderated learners' anxiety levels. Together with a humorous and energetic teaching style, evidenced by students' evaluations, the selected teacher was also technically prepared and was expected to deliver efficient remote language courses. However, in her actual teaching practices, she still transferred the pedagogical practices from face-to-face meetings to the online environment, which was not appropriate. Specifically, that teacher did not realize some exclusive sources of tiredness in online classes, such as exhaustion because of looking at the screen attentively for an unusually long time. Similarly, the mini-tests with time constraints were perceived neutrally in the conventional classroom,

whereas it became problematic in the online listening class because it was unfair for students who did not have a stable Internet connection. Furthermore, while speaking in a FL and receiving negative feedbacks from teachers were already a source of anxiety for FL learners (Aydin, 2008), those issues were worsened by the distinctive problems of online meetings. For example, since the teacher still assumed that all learners engaged equitably in the peer discussions as in normal classrooms, she randomly called on students to reflect on their discussions' results and gave feedback when needed without encouraging voluntary answers. Consequently, although all students loved the teacher's personality and dedication to teaching, they still felt that her practice needed some improvement to be more appropriate to online meetings. The drawback of this teacher's practice was not an exception, as most language teachers had inadequate professional knowledge of online language delivery (Russell, 2020).

The unreadiness emerging from the qualitative data was not surprising. Generally speaking, it takes at least six to nine months to fully plan, prepare and develop a completely online university course (Hodges et al., 2020). That long preparation time fosters adequate time for the transition from face-to-face to online teaching (Russell, 2020), whereas emergency online courses under hazardous conditions debilitated instructors from being psychologically and methodologically prepared.

In all, the qualitative data revealed that due to the urgent shift to a new learning setting, everything was unready and intensified the FL anxiety in the language classroom. Not only were the system and hardware below requirements, but also students were not ready for the new learning environment, and teachers were not adequately prepared for the online pedagogy to deliver efficient lectures. This emerging phenomenon also fortified the non-linear interaction between various factors that led to the non-linearity in the learning trajectory. The change from the face-to-face classroom was not simply shifting from one setting to another, but it exerted great variations in the teaching and learning experience. The teaching practices that were effective in the conventional classroom were no longer successful in the online lectures, while students' anxiety levels were not only influenced by factors related to the FL classroom, but by such uncontrollable factors as internet connection, surrounding noise, or family matters.

Implications

The results of this study revealed the anxious feelings of language learners and the difficulties of both teachers and learners in emergency remote learning settings. Findings were also similar to previous studies on online language teaching pedagogy, in which they highlighted the absence of training for online language teaching in the teacher education programs (Abras & Sunshine, 2008; Russell & Murphy-Judy, 2020). The global pandemic, together with the sudden shift to online learning helped clarify the problems. Thus, they reinforced the need to include the knowledge of educational technology and online pedagogy into the language teacher training programmes as well as the teachers' professional development.

The quantitative and qualitative data supported Horwitz (2017)'s assertion that FL classroom anxiety is not simply the composite of communication apprehension, fear of negative evaluation, and test anxiety. Instead, these three labels are just dominant types emerging from the literature, besides other minor sources. In addition, those three

dominant sources of anxiety are interrelated, evidenced by the qualitative data of this study. Therefore, FLCAS is recommended to be administered wholly rather than separately.

The results of this study also confirmed the importance of context in anxiety research, which was proposed by MacIntyre and Horwitz (MacIntyre, 2017). From the CDST perspective, context plays a vital role in language learning research as it exerts forces for non-linear and unpredictable changes. We, therefore, cannot directly transfer the pedagogies from one setting to another. Instead, we must rigorously examine the characteristics of a specific situation to apply proper interventions.

Given that most learners experience language anxiety, though to varying extents, when taking a language class, an investigation into language anxiety should be administered at the beginning, during, and at the end of the course to identify learners' discomfort feelings. For online language classes, an additional investigation into learners' digital literacy is also crucial to offer adequate technical support to reduce their fear of technology and FL learning (Goertler, 2011).

The learners' voices also proposed some practical implications. Efficient remote courses should include both synchronous and asynchronous modes, with some room for self-paced learning. As for synchronous meetings, teachers should adjust and lengthen the break-time between learning sessions to avoid exhaustion caused by the extended use of the computer. Additionally, since most students were not relaxed about answering questions in front of the class and they even expected more time to generate appropriate answers, teachers should provide them with more opportunities for peer-corrections by grouping the less anxious and more anxious students together. In this way, learners can see some exemplars of successful learners and be encouraged to fill the gaps in terms of level (Horwitz, 2017).

Conclusions and Suggestions

This study investigated the changes in anxiety levels of online language learners in the emergency remote language course. Results were analysed following two themes of CDST, namely *dynamism,* and *emergence*. First, anxiety levels in the emergency remote language course fluctuated over time without linearity. This was likely caused by learner-context interactions, and it reflected their responses to the external forces such as poor facilities, student-teacher or student-student communication, and task demands. Second, the causes of anxiety emerging from that context were the unreadiness of all agents involved in the learning process. As such, we should not wait until another hazardous situation arises, but should urgently start planning for remote learning to be more prepared for other similar urgent situations. Furthermore, language teachers were not adequately equipped with online pedagogy and knowledge of educational technology, which inhibited them from efficient online lecture delivery. To bridge the gap, this knowledge should be mandatorily integrated into the teacher education programmes, which is not only important in emergency online teaching but also crucial in the regular online courses. In brief, the results of this study confirmed the interaction between various factors in the language class and anxiety levels. They advocated the inter-dependence of three constructs of FLCAS as well as evidenced the interconnection of factors from the CDST perspective. In conclusion, it contributes empirical evidence to research on the

dynamics of FL anxiety in different timescales, which is a key characteristic of research in CDST.

This study was not without limitations. Firstly, although the global pandemic setting helped clearly identify the potential problems of online language teaching, the research duration was relatively short and uncontrollable because it depended on the actual situation of the pandemic. Future research on the dynamics of anxiety in online learning courses from the CDST perspective should investigate different time scales, either shorter or longer, to contribute empirical evidence to the body of research on language learners' psychology from the CDST approach.

Secondly, due to the quarantine, lack of preparedness of facilities, and the nature of distance learning, it was hard to maintain students' full participation in the data collection despite their commitment at the recruitment stage. Hence, the final number of participants was relatively few. Future longitudinal studies should recruit more participants to guarantee the final number of valid respondents.

Acknowledgements

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Appendixes

Foreign Language Classroom Anxiety Scale (FLCAS)
For Online Language Classroom

1. I never feel quite sure of myself when I am speaking in English in online class.
2. I don't worry about making mistakes in online English class.
3. I tremble when I know that I'm going to be called on in online English class.
4. It frightens me when I don't understand what the teacher is saying in English in online class.
5. It wouldn't bother me at all to take more online English classes.
6. During online English class, I find myself thinking about things that have nothing to do with the course.
7. I keep thinking that the other students of the online course are better at English than I am.
8. I am usually at ease during tests in my online English class.
9. I start to panic when I have to speak without preparation in online English class.
10. I worry about consequences of failing my online English class.
11. I don't understand why some people get so upset over online English classes.
12. In online English class, I can get so nervous I forget things I know.
13. It embarrasses me to volunteer answers in online English class.
14. I would not be nervous speaking English with native speakers via online platforms.
15. I get upset when I don't understand what the teacher is correcting in online course.
16. Even if I am well prepared for online English class, I feel anxious about it.
17. I often feel like not going to my English class.
18. I feel confident when I speak in my online English class.
19. I am afraid that my English teacher is ready to correct every mistake I make in online course.
20. I can feel my heart pounding when I am going to be called on in my online English class.

21. The more I study for an online English test, the more confused I get.
22. I don't feel pressure to prepare very well for online English class.
23. I always feel that the other students in online course speak English better than I do.
24. I feel very self-conscious about speaking English in front of other students in online course.
25. Online English class moves so quickly I worry about getting left behind.
26. I feel more tense and nervous in my online English class than in my other classes.
27. I get nervous and confused when I am speaking in my online English class.
28. When I am on my way to access to online English class, I feel very sure and relaxed.
29. I get nervous when I don't understand every word the English teacher says in online course.
30. I feel overwhelmed by the number of rules you have to learn to speak English in online class.
31. I am afraid that the other students in online course will laugh at me when I speak English.
32. I would probably feel comfortable in online English class if my classmates are the native speakers of English.
33. I get nervous when the English teacher in online course ask questions which I haven't prepared in advance.
*** negatively worded items 2, 5, 8, 11, 14, 18, 22, 28 & 32

Learning Journal Prompts

1. Please describe your feeling in detail: How are you feeling right now after you have done today's class?
2. Recall positive things, or things that satisfied you in today's class?
3. Recall what you are worried about the class/course right now after you have done today's class.
4. Which particular part(s) of the class today that worried you the most?
5. Compared with last week's class, did your feeling change?
If yes, how it changed, and why it changed?
6. Which part(s) of the lesson/class, or which skill that you think you need to improve?
7. What are you going to do to overcome the shortcoming/dissatisfaction/fear in today's class? (Learning strategies)
8. What do you think teachers should do to improve your learning environment/ experience?