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Foreign Language Learners' Speaking Anxiety and Enjoyment With Single-word Vocabularies and Phrasal Verbs Over Time: An Idiodynamic Perspective

Although evidence concerning how cognitive task complexity influences task performance abound, its impact on emotional variables remains underexamined. Besides, previous research has mainly treated emotions as stable individual difference variables. To address these limitations and following complex dynamic systems theory, this research adopted an idiodynamic approach to investigate fluctuations in Foreign Language Speaking Anxiety (FLSA) and Foreign Language Speaking Enjoyment (FLSE) among four female intermediate-level English learners under two cognitively different speech production conditions: using single-word vocabulary (less complex) and phrasal verbs (PVs, more complex). Results of per-second self-ratings revealed that vocabulary knowledge and cognitive load level triggered fluctuations in FLSA and FLSE quite differently. Interestingly, speakers reported high levels of both anxiety and enjoyment while using PVs. This finding can shed more light on the dynamics of FLSA and FLSE in foreign language classrooms. Implications for considering dynamics of emotional variables in oral task design is discussed.

Key words: Cognitive Load Theory (CLT), Foreign Language Speaking Anxiety (FLSA), Foreign Language Speaking Enjoyment (FLSE), idiodynamic method, phrasal verbs, vocabulary knowledge

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There is quite a large body of research depicting that both positive and negative emotions influence second language acquisition (e.g., Dewaele, 2013; MacIntyre & Vincze, 2017; Piniel & Albert, 2018). These emotions interact with various factors that represent foreign language learners' cognition, affect, behavior, and Foreign Language (FL) development (Bielak, 2022). Among these emotions, Foreign Language Anxiety (FLA) (Horwitz, Horwitz, & Cope, 1986) and Foreign Language Enjoyment (FLE) (Dewaele & MacIntyre, 2014, 2016) have been extensively studied over the past decade (Bielak, 2022). However, most studies on FLA and FLE have employed traditional research methods focusing on collecting retrospective data about emotional reactions, and their causes. Consequently, the dynamic nature of these emotions has often been overlooked, resulting in static interpretations of these variables (Boudreau et al., 2018). Since the introduction of Complex Dynamic Systems Theory (CDST), affective variables have been increasingly considered dynamic and assessed via innovative research methods. The idiodynamic method as a mixed method technique, generates streams of quantitative data that can be immediately linked to qualitative interpretations (MacIntyre, 2012). This method enables CDST researchers to evaluate how interacting internal emotional and psychological characteristics fluctuate within an individual over short time scales. It also facilitates the exploration of factors that cause these fluctuations (Hiver & Al-Hoorie, 2020), thereby addressing some limitations of earlier studies (MacIntyre & Legatto, 2011). Although the dynamic motion of emotions in foreign language contexts has received particular attention (e.g., Elahi Shirvan & Talebzadeh, 2018; Gregersen, 2020; Gregersen et al., 2014), the factors influencing individual patterns of FLA and FLE during English communication remain insufficiently explored. This study was an attempt to shed more light on language learners' fluctuations in Foreign Language Speaking Anxiety (FLSA) and Foreign Language Speaking Enjoyment (FLSE) as induced by their single-word and phrasal-verb vocabulary knowledge in the process of oral production.

Vocabulary knowledge has long been recognized as a critical component of language skills, including reading (Brooks et al., 2021), listening comprehension (Noreillie et al., 2018), and speaking ability (Enayat & Derakhshan, 2021). There is now a large body of research indicating that limited vocabulary knowledge is linked to increased speaking anxiety and impaired speaking ability (e.g., Choompunuch et al., 2021; MacIntyre & Serroul, 2015; Rajitha & Alamelu, 2020). Recently, research on vocabulary knowledge and speaking ability has expanded from single words into collocations (e.g., Adelian et al., 2015; Sonbul et al., 2020; Uchihara et al., 2022; Yazdandoost et al., 2014). Different types of collocations, like phrasal verbs, cover about 50% of both written and spoken English, and are especially prevalent in native speakers' oral discourse (Biber et al., 1999). Consequently, besides single-word vocabulary knowledge, PVs are considered an essential predictor of oral proficiency (Uchihara et al., 2022). However, these expressions are among the most challenging aspect of English language to master,

largely, due to their perceived arbitrariness and unpredictability (Walkova, 2012). Cognitive Load Theory (CLT) posits that tasks requiring simultaneous processing of significant amount of information impose a cognitive load, which can influence language learners' anxiety, enjoyment, and performance (Robinson, 2007; Sisakhti et al., 2021). Given the complexity of PVs, encouraging learners to use them instead of single-word equivalents may increase cognitive demand. This study investigates how such cognitive demands influence ELSA and FLSE, providing insights into their dynamic nature during language learning.

Foreign Language Speaking Anxiety (FLSA)

FLA refers to the fear and negative emotional responses associated with studying or using a foreign language (MacIntyre, 1999). This form of anxiety, which is likely to diminish speaking ability (Bashori et al., 2021), is characterized as feelings of embarrassment, shame, and fear of making mistakes while speaking (Safari Moghaddam & Ghafournia, 2019). Researchers have extensively examined FLSA, focusing on its causes, effects, and dynamics (Bárkányi, 2021; Bashori et al., 2021; Curry et al., 2020; Horwitz et al., 1986; Palacios, 1998; Price, 1991; Yalçın & Incecay's, 2014). Studies investigating the causes of FLSA in classrooms highlight various factors, such as fear of failure due to poor performance (Koçak, 2010) and limited vocabulary knowledge (Choompunuch et al., 2021). More recent research has expanded to involve online classes and web-based learning environments, which sometimes help mitigate FLSA (Alla et al., 2020; Bashori et al., 2021; Bashori et al., 2022; Huang & Hwang, 2013; Korucu-Kis & Sanal, 2020). In a study including technical high school students, Bashori et al. (2021) showed that Automatic Speech Recognition (ASR)-based language learning decreases speaking anxiety. However, while the dynamic nature of FLSA has been investigated to some extent (Aubrey, 2022; Boudreau et al., 2018; Gregersen, 2014; Kasbi & Elahi Shirvan, 2017), the specific role of vocabulary knowledge in dynamic fluctuations of FLSA has been largely overlooked. Therefore, this study set out to address this gap by investigating how the use of single-word and PVs affects FLSA within an idiodynamic framework.

Foreign Language Enjoyment (FLE)

With the rise of positive psychology in English Language Teaching (ELT), researchers have increasingly studied the crucial role of positive emotions, such as enjoyment in language learning (e.g., Bashori et al., 2021; Dewaele & MacIntyre, 2014, 2016; Dewey, et al., 2018). Positive emotions are believed to promote successful language learning (Resnik, 2020). On the contrary, negative emotions like anxiety hinder language input (Dewaele et al., 2020). In ELT settings, FLE encompasses feelings of "enjoyment, fun, interest, and lack of boredom" while learning a language (Dewaele & MacIntyre, 2014, p. 242). Such positive feeling happens when an individual's psychological needs are met (Dewaele & MacIntyre, 2014).

Currently, there has been an increasing interest in studying FLE in EFL contexts. Recent studies suggest that various factors like age, self-perceived Foreign Language

(FL) proficiency, classroom environment, and teacher personality, influence the development of FLE (Dewaele et al., 2019; Li et al., 2021). Furthermore, several researchers have explored the relationship between FLE and Foreign Language Classroom Anxiety (FLCA) (e.g., Dewaele & Alfawzan, 2018; Li et al., 2020). Their findings indicate that FLE positively predicts language achievement whereas linguistic gains are negatively regressed on FLCA.

However, Dewaele & MacIntyre (2014) state that FLE and FLA are two independent constructs, and their presence or absence necessarily imply polarity. Despite growing interest in FLE, few studies have looked at enjoyment through the lens of CDST-oriented methods (e.g., Boudreau et al., 2018; Elahi Shirvan et al., 2017). Among the related studies, Elahi Shirvan and Talebzadeh (2017) investigated the dynamics of FLE in conversation and found out that the dynamicity of enjoyment occurs not only within individuals but also between individuals, i.e., interpersonally. Notwithstanding, to the best knowledge of the authors, whether Phrasal Verb (PV) knowledge can influence the dynamic patterns of change in FL speaking anxiety and enjoyment has not been considered in previous research, which is the main focus of the current study.

Phrasal Verb and Vocabulary Knowledge

According to the theoretical framework of language ability, vocabulary knowledge, particularly PV knowledge is a critical predictor of speaking proficiency and language performance (Bachman & Palmer, 1996; Nation, 2001). Despite their ubiquity in English, PVs are notoriously difficult for language learners because of their semantic and structural complexity (Walkova, 2012). The complex nature of learning and developing native-like PV knowledge has been indicated clearly in previous research (e.g., Celce-Murcia & Larsen-Freeman, 1999; El-Dakhs, 2016; Walkova, 2012). Research suggests that the complexity of PVs often leads learners to avoid them, opting instead for semantically equivalent single verbs (Dagut & Laufer, 1985; El-Dakhs, 2016; White, 2012). Additionally, psychologically, using PVs may increase cognitive load, thus heightening anxiety and impacting performance. Sisakhti et al (2021), for instance, argue that demanding tasks requiring multi-word units overload working memory and enhance anxiety. Limited research has mentioned the essential role of PV knowledge in foreign language learners' speaking anxiety (e.g., Mohammadi & Enayati, 2018; Nation, 2001). However, how obligatory use of PVs might impact FLSA and FLSE has not been sufficiently addressed by research. Because of the extreme variety of English PVs (Strong & Boers, 2019), they can be known as one of the main cognitive anxiety-provoking factors that might trigger speaking task difficulty and, hence, impede speaking performance (Hanifa, 2018).

Cognitive Load Theory (CLT)

Cognitive Load Theory (CLT) explains how task complexity influences learners' cognitive resources (Chen & Chang, 2009). Overloading working memory can impede learning outcomes, especially when tasks involve unfamiliar or challenging material (Lin & Chen, 2006; Sweller, 2007). Studies have found a correlation between cognitive

load and language anxiety, with higher cognitive load leading to increased anxiety (Paas & van Merriënboer, 2020). Therefore, understanding the factors that overload language learners' working memory and cognitive processes while performing a task should be among the primary aims of instructional designs from CLT perspective (Chen & Chang, 2009).

However, only a few studies have investigated the elements influencing the overloading of the cognitive processes. For instance, the relationship between anxiety and cognitive load has been examined by several researchers (e.g., Abdulaal et al., 2022; Chen & Chang, 2009; Lee, 2018; Paas et al., 2020; Presbitero, 2020). In a study on 88 non-English major students at a technological institution in Taiwan, Chen and Chang (2009) found that students who were more anxious about learning a foreign language also had higher cognitive loads. Furthermore, Lee (2018) conducted an empirical study investigating the impacts of task complexity on cognitive load and anxiety. Using self-ratings, duration judgements, and a dual-task methodology, the study indicated that as tasks became more complex, participants reported higher levels of perceived difficulty, mental effort, and anxiety. However, despite its importance in learning different types of vocabulary knowledge, including single-word or multiword vocabulary units, the association between anxiety and declarative memory has been neglected from the CLT perspective. Declarative memory is "the capacity to consciously remember and learn information" (Ruiz et al., 2021, p. 515). According to limited studies, positive emotional stimuli might boost declarative vocabulary knowledge (DeKeyser, 2007; Kralova et al., 2022). However, whether foreign language learners' anxiety and enjoyment in the conscious use of single- or multi-word units in their speaking tasks influence their declarative memory and cognitive load is a neglected issue. According to Cognitive Load Theory (CLT), it is hypothesized that pushing learners to use PVs instead of single-word vocabularies while doing speaking tasks will impact the quantity of information the brain processes simultaneously. Given the complexity of PVs, this cognitively demanding task might influence learners' anxiety (Robinson, 2007), enjoyment, and consequently, affect the quality of their speech output (Sisakhti et al., 2021).

Idiodynamic Studies on Affective Variables

The idiodynamic method provides insights into the non-linear alterations and fluctuations of affective variables in a system over time as well as their potential causes (De BOT, 2008; Hiver & Al-Hoorie, 2020). Unlike traditional approaches, which view emotions as fixed characteristics (e.g., Bărkányi, 2021; Bashori et al., 2021; Curry et al., 2020; Horwitz et al., 1986), idiodynamic studies focus on the dynamic interplay of internal and external factors influencing emotions (Dewaele & Dewaele, 2017; Elahi Shirvan & Talebzadeh, 2020; Gregersen et al., 2014; Kruk, 2018; MacIntyre & Legatto, 2011). In this perspective, the researcher manipulates a cognitive variable, such as task difficulty, to examine its impact on the dynamics of other variables.

A range of different cognitive and affective variables can be studied using this approach. In recent years, many researchers have explored the dynamic nature of anxiety using the idiodynamic method (e.g., Elahi Shirvan & Talebzadeh, 2017;

Gregersen et al., 2014; Gregersen, 2020; Saghafi & Elahi Shirvan, 2020). For instance, Gregersen, et al. (2014) examined the individual FLA of learners, its dynamic nature, and the participants' explanations of frequent shifts in their affective reactions. The study supported the idea that anxiety experiences in foreign language learners should be researched at the individual level. Additionally, Chen (2023) using idiodynamic method, set out to explore fluctuations in foreign language enjoyment as induced by simple and difficult speaking tasks. The findings indicated how task design, and vocabulary knowledge can trigger high and low foreign language enjoyment while performing the task.

However, although a lack of vocabulary and phrasal verb knowledge has been confirmed as crucial elements leading to FLSA (Choompunuch et al., 2021; Garnier & Schmitt, 2016), no study, to the authors' knowledge, has been conducted to investigate the changes in task difficulty and its effect on individual learners' level of FLSA and FLE when the learners are pushed to use PVs in their speech productions. As an anxiety-provoking cognitive factor, English PVs may contribute to speaking task difficulties and, hence, hinder speaking performance due to their vast variety (Hanifa, 2018; Strong & Boers, 2019).

As an attempt to partially fill this gap and utilizing Idiodynamic method, the present study investigated variations in foreign language learners' speaking anxiety and enjoyment while they were required to shift from non-obligatory to obligatory PV use in their speech production. Idiodynamic method gives in-depth information about different factors that might influence speaking performance at individual level (Saghafi & Elahi Shirvan, 2020).

Drawing on the above-mentioned gap and more specifically to test how FLSA and FLSE feature per second during a cognitively loaded speaking performance, the following research questions were posed:

1. How does language learners' FLSA fluctuate over time when they use single-word vocabulary compared to phrasal verbs during speaking tasks?
2. How does language learners' FLSE fluctuate over time when they use single-word vocabulary compared to phrasal verbs during speaking tasks?
3. What factors do learners identify as contributing to fluctuations in their FLSA and FLSE during these tasks?

Method

Participants and Context

This research was performed in an English as a foreign language (EFL) class at a private language institution in Ardabil, Iran, where Azari-Turkish is the first language for most residents. Similar to prior research (e.g., Elahi Shirvan & Talebzadeh, 2020), participants were selected voluntarily, which contributes to the internal validity of the research. A coeducational intermediate-level classroom of 10 English language learners received a consent form explaining the study objectives and data collection methods.

Four female learners agreed to participate. They shared same cultural backgrounds, were high school (Nazanin and Fatemeh) or college students (Anita and Sara), and were attending English classes to enhance their general English language proficiency. The participants were asked to call themselves by their first names. Anita (18 years old), Sara (22), and Nazanin and Fatemeh (both 17) were the selected participants. Fatemeh and Nazanin were cousins and began studying English together at the age of 8. Anita had been learning English since she was 11, while Sara reported sporadic study without a specific starting point. All four participants signed consent form and were ensured they could withdraw at any point if they felt uncomfortable.

Instruments

To measure the participants' familiarity with PVs, the study utilized Liu's (2011) *The Most Frequently Used English Phrasal Verbs in American and British English: A Multicorpus Examination*. This list contains 150 PVs identified through corpora analysis and categorized based on their usage patterns in American and British English. To compile the list, Liu (2011) relied on two major linguistic corpora: The Corpus of Contemporary American English (COCA) and the British National Corpus (BNC). These corpora provide a large and representative sample of natural language use across various text types, ensuring the reliability of the findings. Additionally, the validity of Liu's (2011) list is well-established, as the study builds upon previous corpus-based research, including Biber et al. (1999) and Gardner and Davies (2007) whose methodologies and findings have been widely recognized and validated. By integrating and expanding upon these earlier studies, Liu (2011) strengthens the credibility and applicability of the selected PVs in different linguistic contexts.

As another instrument, a set of twelve general speaking tasks were selected from *Touchstone Four* (intermediate level) coursebook. This coursebook is widely used in English learning classrooms and mainly covers familiar and engaging topics. This stage was crucial to ensure that unfamiliar topics would not adversely influence the participants' performance (Saghafi & Elahi Shirvan, 2020). The appropriateness of the topics was reviewed and validated by experienced EFL instructors. Their feedback helped refine the topics to ensure they align with language learning objectives. Additional instruments included a mobile camera for video recording and the Anion Variable Tester (V2) software for second-by-second self-ratings of anxiety and enjoyment.

Procedure

To begin with, Liu's (2011) list was used to measure the participants' familiarity with commonly used English PVs. Next, as mentioned above, in order to control for the negative influence of topic familiarity on the research outcome, (MacIntyre & Legatto, 2011), participants were given twelve topics. However, since self-selection topics are assumed to increase learners' willingness to communicate (Ellis, 1984), the participants were given the chance to choose six, out of twelve, topics for their

speaking tasks. By the way, giving them six topics, rather than one or two, was intended to alleviate the negative influence of topic familiarity on the research outcome. Also, the participants were warned to speak no more than two minutes on each topic. What is more, to reduce observer effect, video recordings began at the start of the session; however, only the latter part of each recording—after greetings and warm-ups—was used for data collection. Having completed the tasks, the participants reviewed their video recordings with the teacher researcher and rated their Foreign Language Speaking Anxiety (FLSA) and Foreign Language Speaking Enjoyment (FLSE) per second using idiodynamic software. This allowed for detailed tracking of emotional fluctuations during their speaking performance.

Results

Foreign Language Learners' Familiarity with PVs

Participants knowledge of PVs was assessed using 150 most frequently used English PVs based on Liu's (2011) list. Table 1 summarizes the result.

As Table 1 shows, from 150 most frequently used PVs, Anita demonstrated the highest familiarity with PVs (55%), followed by Fatemeh (52%), Nazanin (50%), and Sara (47%).

Within-Person FLSA and FLSE Dynamics With and Without Phrasal Verbs (PV)

The outcomes revealed dynamic fluctuation in FLSA and FLSE for each participant, depending on whether they used PVs during their speaking task. Figures representing these fluctuations were analyzed for each individual. As Figure 1 indicates, Anita experienced a notable increase in anxiety when using PVs compared to speaking without them. She attributed this to the cognitive effort required to search for the appropriate PV while speaking. She explained, "when I have to use PVs while speaking, I feel more anxious because I have to think harder to find the right one. It takes extra effort, and that makes me nervous."

Table 1

Participants' Knowledge of PVs

Participant	Known PVs	Known PVs (%)
Anita	82	55%
Fatemeh	78	52%
Nazanin	75	50%
Sara	70	47%

Figure 1

Anita's FLSA With and Without PVs

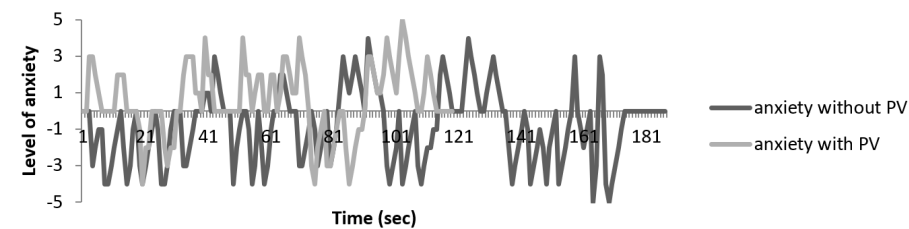


Figure 2

Anita's FLSE With and Without PVs

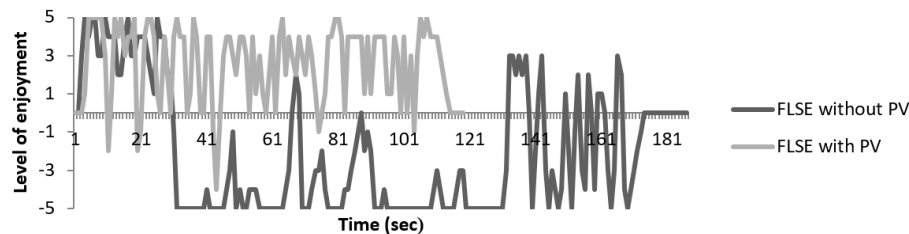
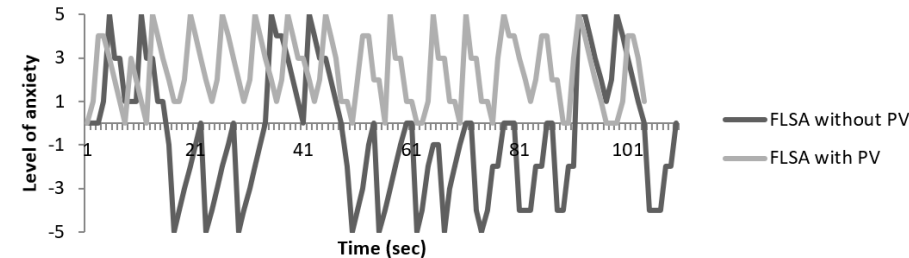


Figure 3

Fatemeh's FLSA With and Without PVs



As can be seen in Figure 2, despite the higher anxiety, Anita reported enjoying the use of PVs, describing it as both challenging and rewarding. She noted feeling more fluent and native-like when incorporating PVs. she believed that using PV in her speaking was enjoyable, and she felt native-like and more fluent. She stated “although using PVs makes me more anxious, I actually enjoy it. It’s challenging, but it also feels rewarding. When I use them, I feel more fluent and even a bit more native-like.”

According to Figure 3, Fatemeh experienced dynamic feelings of anxiety while speaking in English. Similar to Anita, her anxiety levels increased while using PVs due to the cognitive demand. Fatemeh also explained that her anxiety was high while speaking with and without PVs, where she felt hindered by limited vocabulary. She explained her experience and said “my anxiety goes up and down when I speak English. I feel more anxious when using PVs because I have to think harder to find the right one. But even without them, I still feel anxious because of my limited vocabulary knowledge.”

As it is obvious in Figure 4, Fatemeh reported greater enjoyment during PV-based tasks, explaining that using PVs gave her a sense of security and correctness in her speech. She reported “I actually enjoy tasks that include PVs more. Using them gives me a sense of security and makes me feel like my speech is correct and native-like.”

As Figure 5 shows, Nazanin also experienced regular patterns of high anxiety when using PVs in her speaking. She explained that due to uncertainty about the correct usage of PVs, she felt anxious. She expressed her uncertainty as “the uncertainty about whether a PV is appropriate or natural makes me nervous while speaking.”

In Figure 6, the dynamics of FLSE shows that Nazanin’s enjoyment level’s increased when using PVs, as she felt proud of her ability to incorporate these phrases into her speech. she noted that “when I successfully use a PV in my speech, I feel more confident and accomplished.”

The results in Figure 7 disclose that Sara exhibited significant fluctuations in anxiety, particularly while using PVs. She attributed this to the challenge of retrieving PVs from memory. She added “when I use PVs, my anxiety goes up a lot. Sometimes, I struggle to remember the right one, and that adds pressure.”

According to Figure 8, her enjoyment fluctuated more than the other participants, as she found PV use stimulating but occasionally overwhelming. The recording process also intermittently reduced her enjoyment. She stated her feelings as follow: “there are moments when I really enjoy speaking with PVs, but suddenly, knowing that I’m being recorded takes away the fun. I feel like I have to be extra careful with my words.”

Figure 4

Fatemeh's FLSE With and Without PVs

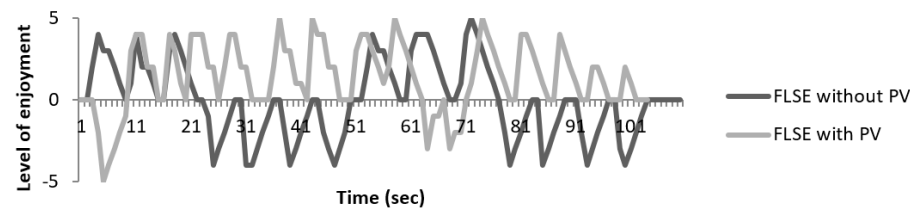


Figure 5

Nazanin's FLSE With and Without PVs

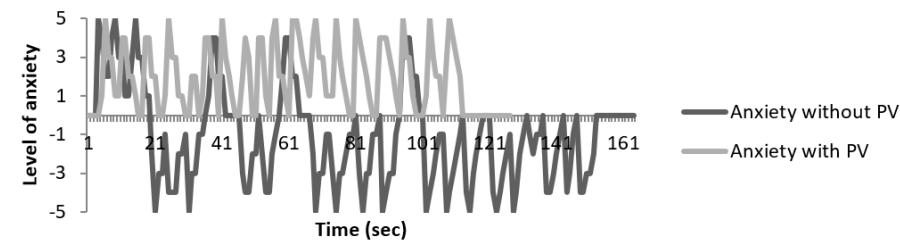


Figure 6

Nazanin's FLSE With and Without PVs

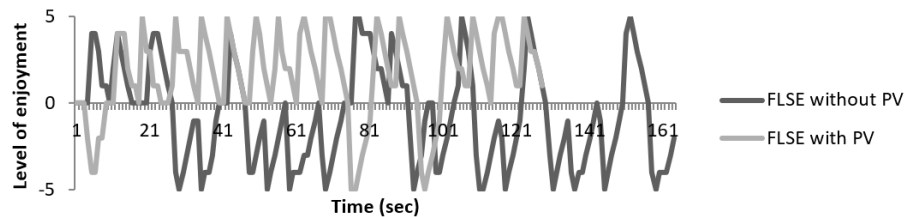
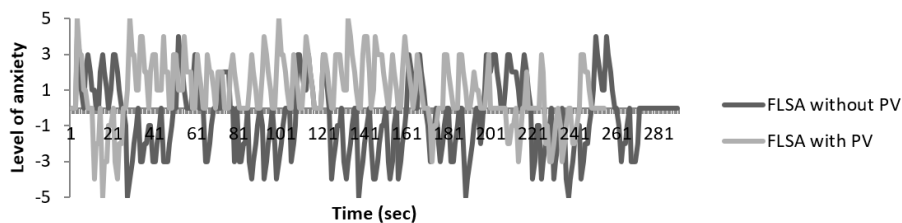
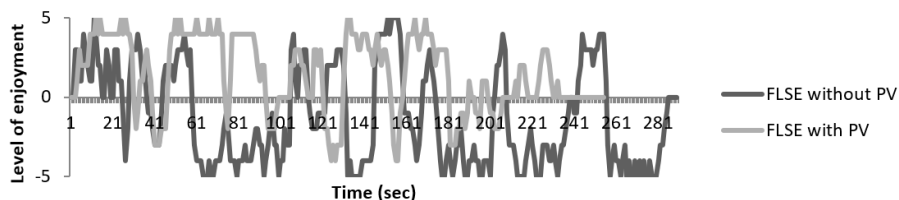


Figure 7*Sara's FLSA With and Without PVs***Figure 8***Sara's FLSE With and Without PVs*

Discussion

The present study was the first attempt to examine fluctuations in FLSA and FLSE when learners used single-word vocabulary and PVs during speaking tasks. The findings revealed several key points. In the case of the first research question, participants consistently reported higher levels of FLSA when using PVs. This aligns with Cognitive Load Theory, which suggests that tasks requiring complex language forms—including PVs—place a greater cognitive load on working memory (Robinson, 2007). Also, consistent with Lee's (2018) research, the present study confirmed that increasing task complexity leads to greater cognitive load and heightened levels of stress. In other words, the participants' difficulty in retrieving appropriate PVs during speech production led to increased perceived difficulty, mental effort, and stress.

For the second research question, it was predicted that speaking without PVs would lead to more frequent enjoyment of foreign language speaking. However, despite the increase in FLSA, participants experienced heightened FLSE when using PVs. The findings extracted from the first and second research questions support earlier research (e.g., Dewaele & MacIntyre, 2014, 2016), which assert that anxiety and enjoyment are two distinct emotions that can coexist. In other words, lack of enjoyment does not always indicate a high level of FLSA, and the absence of FLSA does not necessarily imply the presence of FLE, even though FLE can be considered as a potential treatment to reduce FLSA (Dewaele & MacIntyre, 2014, 2016). Looking at the issue from positive psychology perspective, the outcome of the study aligns with positive psychologists' beliefs that there is no polarity of emotions and they cannot be easily divided into negative or positive ones, and in many situations they may complement each other (e.g., Derakhshan, 2022; MacIntyre, 2021; MacIntyre & Gregersen, 2012).

Concerning the third research question, participants identified a lack of vocabulary knowledge as a crucial cognitive element in their moments of a high FLSA level and a low FLSE level. The outcomes confirm earlier research findings (e.g., Chen, 2023; Choompunuch et al., 2021; Horwitz et al., 1986). According to participants' explanations, although language learners were familiar with some of the PVs, it took some time to remember the exact meaning of the desired PV. In this regard, the investigations of Chen (2023) about the dynamic fluctuations of FLSA while doing a cognitively simple and complex speaking task also indicate that the deficiency in retrieving proper vocabulary while performing a task is a source of FLSE arousal. From the Cognitive Load Theory (CLT) perspective, learning a new language is biologically secondary information that requires conscious attention, instruction, and effort to learn. In this regard, it is established that novel information must first be processed in working memory before being stored in long-term memory, and the narrow-limits-of-change principle severely restricts how new information may be processed (Paas et al., 2020). Since foreign language learners' avoidance of using PVs has been indicated by previous researchers (e.g., El-Dakhs, 2016; White, 2012), it is believed that one reason for the participants' not remembering the meaning of PVs is that the PVs have not entered in their long-term memory yet. On the other hand, students' regular patterns of less FLSA without PVs approves that language learners could freely choose single words from their declarative knowledge. In this case, the findings indicate that regardless of a learner's ability level, learning lexical/semantic information (such as word meanings) is always dependent on the declarative memory system (Ullman, 2015, 2016). Furthermore, participants' evaluations regarding their senses of enjoyment, security, and self-confidence while using PV are in agreement with the outcomes of Mohammadi and Enayati (2018), who concluded that using lexical chunks enhanced language learners' self-esteem. However, contrary to

their findings, as the rating scales indicated, due to students' lower command over PVs, they had to spend more time on retention, resulting in increased patterns of FLSA.

Conclusion and Pedagogical Implications

This study provides novel insights into the dynamics of FLSA and FLSE during speaking tasks involving PVs. This was the first so-called emotion-cognition investigation in which the patterns of changes of FLSA and FLSE were explored as triggered by foreign language learners' knowledge of PVs and their ability to use them in speaking tasks. The results of intra-individual examinations indicated that pushing language learners to use PVs added to cognitive task complexity and changed the patterns of their level of anxiety from low to high. On the other hand, a dynamic pattern of FLSE was also seen in participants while speaking with and without PVs. Although participants experienced a low level of FLSE in the single-word phase due to their insufficient active vocabulary knowledge, they, unexpectedly, reported higher levels of FLSE in the PV phase. The in-depth analysis of participants' emotional changes while using single-word or PVs in their speech production helped us understand that FLSA and FLSE are two autonomous elements that may not necessarily influence each other. Furthermore, participants' explanations regarding the amount of time needed to find the appropriate PV in moments of high anxiety indicated that lack of mastery of PV in declarative memory can be a negative predictor of speaking.

Considering that learning a language is a complex phenomenon and learners constantly adapt their language resources to support meaning construction in response to affordances that arise in the communicative context (Larsen-Freeman & Cameron, 2008), utilizing an idiodynamic method can be influential in understanding language learners' emotions and their cognitive abilities while they are trying to adapt themselves with the ongoing context. Therefore, using an idiodynamic method similar to the present study might help foreign language teachers and researchers better figure out students' unstable patterns of emotions when they are required to do cognitively demanding tasks, like using PVs in their speech production. According to several studies (e.g., Choompunuch et al., 2021; Horwitz et al., 1986), lack of vocabulary knowledge can be considered one of the anxiety-provoking factors, which may hinder foreign learners' speech and negatively influence their positive emotions. Therefore, besides single-word vocabulary knowledge, they can be considered an essential predictor of oral proficiency (Uchihara et al., 2021).

Limitations of the Study and Future Research

While the findings are insightful, several limitations must be acknowledged. First, the sample size and the focus on female participants limit the generalizability of the results. Future studies could include a more diverse

sample to explore potential gender differences and cultural factors influencing FLSA and FLSE. Furthermore, despite researchers' predictions, participants spoke less than expected, which might have influenced study results. This can be notable for future researchers. Second, the study relied on self-ratings, which may be influenced by subjective biases. Incorporating physiological measures (e.g., heart rate or skin conductance) alongside self-reports could provide a more comprehensive understanding of emotional dynamics. Third, future research could investigate the long-term effects of PVs use on FLSA and FLSE. Longitudinal studies could assess whether repeated exposure to PVs reduces anxiety and enhances enjoyment over times. Finally, while the study focused on the influence of vocabulary knowledge and cognitive load, it did not account for other psychological or cognitive variables, such as motivation, personality traits or working memory capacity. Future studies could explore how these factors interact with FLSA and FLSE, providing a more holistic understanding of learners' experience.

Conflict of Interest Disclosure

The Authors report no conflicts of interest.

Funding

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Research Ethics Statement

Informed consent has been obtained from all participants.

The authors assert that it is impossible to generalize the study's findings to other contexts due to the idiodynamic resulting from Complex Dynamic Systems Theory (CDST). Consequently, after consulting with the university professors, it was determined that there was no need to obtain institutional ethical approval because the outcomes posed no risk to the participants. Rather, because this was a small-scale study, the researchers promised to uphold the participants' rights in a confidential agreement. Furthermore, they guaranteed that their involvement in the study would not be harmful.

Data Availability Statement

Data associated with the current study will be made available upon reasonable request to the corresponding author.

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