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Foreign language speaking anxiety and discourse markers in face-to-face and online classes

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Abstract
Foreign language learners' feelings such as speaking anxiety (FLSA) play a significant role in their overall gain pedagogically. In a similar vein, online and face-to-face contexts pose a distinct set of emotional and cognitive challenges in foreign language speaking. Considering the interconnectedness between heightened speaking anxiety and discourse markers, the aim of the study is to scrutinize how L2 learners regulate their FLSA by employing various Discourse Markers in different settings. An embedded mixed method design was conducted to collect both qualitative and quantitative data via FLCAS, Language Situations, English proficiency tests, and semi-structured group interviews. Conveniently sampled 80 adult L2 learners were recruited in face-to-face and online learning contexts. The data analysis revealed that the tension of L2 speaking showed no statistically significant differences for online and face-to-face learning. Moreover, structural DMs were found to be the most frequently employed type overall while online group used more referential and cognitive DMs. Hence, DM uses might be encouraged in foreign language classes to foster fluency and to handle emotional tensions in speaking.

Keywords Foreign language speaking anxiety, Online teaching, Discourse markers, English language teaching, Fluency

1 Introduction

As comprehension precedes production, it takes comparatively more time and effort for speaking skill to develop [37]. Speaking is based on the amalgamation of complex linguistic competencies from discriminating sounds to building accurate and fluent instant messages and swift cognitive processes [19]. In a similar vein, this intricacy has been reported to be one of the most challenging tasks in the case of foreign language acquisition [32]. One of the subsidiary factors are emotions since they alter the speaker's performance dramatically. Dewaele et al. [13] states that "their [emotions] particular combinations in the classroom can silence and freeze learners or excite and warm them, which will affect the trajectory of their language-learning journey." (p. 7).

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In specific, Foreign Language Speaking Anxiety [23, 39] has been frequently employed to identify negative feelings interfering with speaking performance. One of the areas of interference is fluency. That is, "the ability to sustain conversation without pauses and interruptions" [35] has been prone to obligatory stops, which results in discontinuous speech. Likewise, discourse markers (DM) such as "and" and "but" play a crucial role in remedying fluency driven problems while speaking and they might become handful tools in tracing how feelings such as anxiety impede fluency. Lam [30, 48]. Even though FLSA has been extensively associated with L2 speaking and discourse markers have been firmly intertwined with fluency, relatively little research has examined how these two intersect in diverse EFL contexts [56]. Investigating their relationship may provide a better understanding of new ways to improve speaking in EFL classrooms.

FLA is now regarded as a complex and changing emotional construct that affects how learners engage and perform in L2. Modern views highlight that anxiety is not just a fixed personal trait but arises from the mix of learner traits, classroom experiences, and surrounding conditions [33, 41]. Anxiety can impact both thinking and behavior in language learning. It is linked to academic success and can interact with feelings of enjoyment and boredom [13]. Cognitive-behavioral theories suggest that anxious thoughts and avoidance can lead to silence and less participation in class [34]. Recent long-term studies show that foreign language anxiety can change over time and in different learning settings [53]. Personal beliefs also play a role, with new findings connecting fixed and growth mindsets to anxiety and other motivational factors like grit [1]. These insights indicate that anxiety should be studied not only through learners' self-reported feelings but also by observing their language use during interactions. This is especially important for L2 speaking, where anxiety can affect learners' willingness to speak, how they produce speech, and their use of interactional tools like discourse markers. Studying the relation between speaking anxiety and the use of discourse markers can offer a deeper understanding of how emotional states appear in learners' actual L2 speech.

Considering the widespread online classes in the post-pandemic years, these concerns including FLSA in teaching speaking remain mostly unexplored. More specifically, many learners prefer online classes due to their practicalities while it is not known how negative feelings proved to be part of face-to-face teaching are handled in online classes [59]. Furthermore, whether the interconnectedness between DM uses and FLSA in regular EFL classes is valid for online contexts calls for closer scrutiny.

1.1 Anxiety and fluency

Anxiety was defined as an "indefinite state of fear" [50]. In EFL contexts, as suggested by the seminal work of Krashen [29], feelings such as anxiety, stress, apprehension, and nervousness impede speakers from expressing themselves. In particular, Krashen [29] further argued that successful foreign language acquisition heavily depended upon the construct of "Affective Filter"; which acts as a barrier for comprehensible input to be processed, hence it should be lowered. Briefly, stress-free context was proposed as one of necessary conditions for successful L2 acquisition [29]. In accordance with this, Horwitz et al. [22] described Foreign Language (Speaking) Anxiety (FLA) as "the subjective feeling of tension, apprehension, nervousness, and worry associated with an arousal of the autonomic nervous system" (p.126). From that time onwards, it has been exploited from a variety of perspectives. In one of most up to date attempts, it was defined as a

context driven anxiety rather than a personal trait since it was deeply rooted in "the pressures and embarrassment associated with pronunciation errors or negative feedback from peers and teacher L2 learners' experiences" ([57], p. 5).

After the pandemic a number of studies conducted to test how anxiety is managed in online settings. Bashori et al. [7] found that students showed moderate level FLSA and affirmed that online language learning could lessen their anxiety. Similarly, in their review of FLA and online learning, Russell [46] concluded that online language learners feel "less isolated, less anxious, and more connected to their teachers and peers". However, not all studies confirmed the positive assets of online learning on anxiety. For instance, Bárkányi and Brash [6] claimed that "the use of technology can be anxiety-inducing (e.g. cameras) as well as supportive (e.g. online translation tools and dictionaries.". In brief, as contexts and learner profiles vary, the results are more divergent than similar.

On the other hand, fluency was depicted as a composition of complex skills such as demonstrating a global oral proficiency with "few hesitations" in a "semantically densed" manner [16]. Yet, this was challenged due to its obscure operational definitions. Thus, several scholars provided varied perspectives. For instance, Lennon [31] mentions expression of thoughts efficiently and accurately under a time pressure while Newton and Nation [36] construed fluency in relation to speech rate, pause frequency, and the use of hesitation markers. For the purposes of the current study, total speech time in milliseconds and total word counts have been determined as predominant constructs of the fluency excluding variables such as mean lengths of runs and pauses because the primary construct is the speaking anxiety. Besides, FLSA and fluency are closely intertwined. To illustrate, one of many results of failure in controlling FLSA are interruptions on the flow of speech. Detrimental impacts of FLSA on fluency have been exhaustively scrutinized, underscoring closely tied relations between two ([20, 21, 43, 49, 51]; among many others).

1.2 Discourse markers

One of the ways to manage fluency and overcome FLSA induced feelings is the use of DMs in speaking. Although there is no consensus as to how to define (e.g. particle, unit) and group them, DMs are employed to sustain unity and coherence in both verbal and written texts [55]. Schiffrin's [48] discourse marker theory highlighted the essential role of discourse markers in sustaining the smooth flow of conversation while structuring spoken discourse and indicating connections between ideas. Since it was based on the functions of DMs in L2 context, Fung and Carter's [18] taxonomy of four types (e.g. interpersonal, referential, structural, and cognitive) was used to identify DMs in the current study. Specifically, interpersonal DMs are conveying a viewpoint and shared knowledge (e.g. you know). Referentials are connecting two pieces of discourse units (e.g. because). Structural DMs are used to organize discourse units (e.g. first). Finally, cognitive particles are indicating speakers' mental processes and reformulations (e.g. well) [18]. Previous studies underscored that L2 learners tended to use a relatively limited set of DMs for different purposes when they were compared to L1 learners [3, 26].

Research on online contexts or computer mediated settings suggests distinct patterns from face-to-face contexts. For instance, Rababah [44] demonstrated that online learning fostered much more varied set of linguistic functions for DM uses among EFL

learners whereas Shalihah et al. [52] indicated dominance of interpersonal markers used for distinct cognitive and interactional functions in online settings. Briefly, the relationship between DM uses and learning contexts appears to be highly complex. Given that the learners' emotions fluctuate while speaking English, DMs with a restricted set of options might be utilized to unveil how FLSA in L2 speaking is managed across different contexts such as online and face-to-face classes.

1.3 The significance of the study and RQs

Based on Horwitz et al. [22] FLA framework and Schiffrin's [48] discourse marker theory, this study views FLSA not just as a personal emotional trait but as an emotion that can change with different L2 speaking situations. In this view, DMs are seen as tools that help speakers organize their speech, show their attitude, and handle social interactions. Due to the scarcity of research on their relation, the study aimed to examine if learners' anxiety affects how they use these tools differently in online versus face-to-face speaking settings.

The current study's objectives are manifold. To start with, L2 learners' feelings such as anxiety play a significant role in their overall gain pedagogically. In a similar vein, online and face-to-face contexts pose a distinct set of emotional and cognitive challenges in L2 speaking. Hence, the number of studies targeting FLSA in online classes conducted so far is relatively limited, there is a need for studies that will shed light on how L2 learners regulate their FLSA and sustain fluent speech by employing various DMs in different settings. Secondly, the interconnectedness between FLSA and DM use has been restrictedly scrutinized and the results are divergent. Thus, to foster fluency and to mitigate FLSA in L2 speaking classes it is crucial to understand what type of DMs might be employed. Taking all these areas of research into account, following questions guided the current study:

1. How does FLSA relate to DMs in online and face-to-face L2 English speaking classes in maintaining fluency?
2. Do L2 English learners in online class differ from L2 English learners in face-to-face class in terms of FLSA and DM preferences?
3. How do L2 English learners perceive FLSA in online and face-to-face classes?

2 Methodology

2.1 Research design

This study adopts a mixed-methods approach, integrating both qualitative and quantitative methodologies to explore the relationship between FLSA and DM use among L2 learners. Creswell and Plano Clark [11] define three characteristics for such designs: *timing*, *priority*, and *mixing*. For *timing*, a mixed study may be either concurrent/simultaneous meaning "both types of data are being gathered before the analysis of either one is complete" or sequential means that "the researchers collected and analysed one type of data before they collected the other type of data" (p. 388). *Priority* refers to the significance of the data collection tools while *mixing* suggests both quantitative and qualitative measures are employed. The current study follows an embedded mixed design [10], where quantitative data were primary and dominated the data collection while concurrently collected qualitative data complemented findings from a different perspective. In particular, "the secondary data set addresses a different question than the primary

dataset and is used to augment the implementation and/or interpretation of the primary method" (p. 400). The first and second research questions primarily necessitated quantitative measures such as scales and DM uses. To deepen the participants' data on only foreign language speaking anxiety, qualitative measure (i.e. interviews) was used. In that sense, qualitative data function to augment one of the key constructs of the primary data sets, anxiety by testing how it is perceived by the participants. As described by Patton [42], triangulation incorporates multiple methods, such as surveys and scales for quantitative data, alongside interviews, observations, and document analysis for qualitative data.

2.2 Participants and settings

This study utilized convenience sampling methods. Employing a non-probability sampling procedure, the study aimed to collect data from people "closest in proximity and most willing to participate". For the face-to-face data collection phase, 30 students from the School of Foreign Languages at state university in İstanbul and 10 adult learners from a private language institution were recruited. This institution addresses common language challenges faced by Turkish learners, offering both group and individual lessons. The academy also leverages online platforms like Zoom, Microsoft Teams, and Google Teams to provide regular speaking practice, making it particularly suitable for the study's online data collection phase. For the online phase, students of the same private institution were contacted. 40 participants agreed to take part in the study forming the online group. A total of 80 participants were involved, equally divided between face-to-face (Group 1) and online (Group 2) settings. These two institutions offer English courses for adult learners who wish to excel in academic skills in English. Although learners' profiles were similar in these two contexts, there might be institution driven differences among learners. However, context-bound differences were not interfering with the purposes of the study since data collection procedure was the same for all participants and learning contexts were not compared and contrasted with one another. Instead, data collection modes either online or face-to-face were significant variables. Besides, to ensure that participants' English level is not a confounding variable and their educational setting has no direct impact on their DM uses, fluency, and FLSA, participants' English proficiency was cross-checked via English tests. In short, participants were not homogenously divided as university students vs. private institution students. Rather, online group consisted of the participants from a single source, the private language institute whereas the face-to-face group involved participants from an additional source. Participants were adults aged 18–55, all native Turkish speakers with no hearing or speech impairments. Participants were assigned unique codes, such as OP07 for the seventh online participant and FP03 for the third face-to-face participant (Table 1).

Table 1 Participants

	Online	Face-to-face	Age Range	Mean
Private Language Institution	40	10	18–55	24.6
University	0	30	18–34	20.35
Total	40	40		

2.3 Data collection instruments

The study employed multiple tools for data collection, including audio recordings from a video narration task (Language Situations Method), the Foreign Language Classroom Anxiety Scale (FLCAS), and a language proficiency test. Ethical approval for the research was obtained from the Institutional Review Board at Yıldız Technical University, Istanbul with an issue number 2023-12 on December 5, 2023. Written informed consent were obtained from all participants prior to data collection by the researchers. Participation was on a voluntary basis and participants were informed that they might leave at any stage of the study. All personal information was kept confidential and anonymized. Since there were no vulnerable populations or children, obtaining additional guardian permission was not necessary. Some of the data collection took place online, and participants completed the anxiety scale, video narration task, and language proficiency test on digital platforms. All of them completed a demographic form before engaging in the study.

2.3.1 Foreign language speaking anxiety questionnaire

The FLCAS, originally developed by Horwitz et al. [22], was adapted for this study using Öztürk and Gürbüz's [40] 18-item version, which specifically assesses foreign language speaking anxiety. This scale has been validated and widely used in prior studies, demonstrating high reliability. For clarity and accessibility, a translated version of the scale, prepared by Saltan [47] through back-translation, was used.

2.3.2 Interview questions

To supplement quantitative data, semi-structured qualitative interviews were conducted. Adapted from Öztürk and Gürbüz [40], these interviews consisted of five open-ended questions aimed at exploring participants' experiences with speaking anxiety in greater depth. The questions were as follow: (1) Do you think speaking English is an anxiety provoking factor in your language learning process? (2) What kinds of situations cause stress or anxiety on you while speaking English? (3) For you, what are the reasons for this anxiety? (4) Do you worry about making mistakes while speaking? (5) Do you worry about the evaluation and reaction of your friends on your speaking performance? The interviews were conducted in Turkish to minimize bias and encourage more natural self-expression. These qualitative insights were expected to complement the statistical findings and provide a richer understanding of anxiety in language learning.

2.3.3 Language situations method

The study used the "Language Situations" method developed by Wiese [58] to elicit naturalistic DM usage. Participants were shown a video depicting a fictional event, such as a traffic accident, and asked to describe it in a formal spoken context, imagining they were reporting the incident to a police officer. This method, designed to simulate authentic communicative scenarios, combines the benefits of controlled elicitation and naturalistic language use.

The use of diverse communicative contexts (originally involve both formal and informal exchanges in spoken and written modes) allowed for the collection of data reflective of participants' linguistic behavior in realistic settings. For the purposes of the current study, the spoken format was specifically chosen to align with the study's focus on speaking anxiety and classroom-related formal English usage. This method provided reliable

and ecologically valid data, capturing both formal and informal language use, while enabling controlled comparisons across participants. Despite its advantageous uses in restricting contexts, it bares the possibility that its formal and task-dependent nature constrained spontaneous discourse-marker use differently across contexts as well. Similarly, highly formal context might require distinct speaking patterns in terms of fluency. As noted by reviewers, these might be limitations of the task.

2.3.4 Language proficiency test

The Oxford Placement Test (OPT), developed by Oxford University Press, was used to evaluate participants' English proficiency levels. The test, which aligns with CEFR standards (A1-C2), consists of 60 multiple-choice questions. The test confirmed that all participants were B1-level English learners, ensuring homogeneity among the study's participants' L2 proficiency. The role of the English test was to preclude any confounding variables such as proficiency. In particular, the aim was to make sure that preferences for specific DMs were on purpose but not because the participants did not know some individual lexical items. OPT was not originally designed to test English proficiency. Because of practicality issues (e.g. difficulty in testing participants' four skills where there is also an experiment involving a formal speaking task) it was used to ensure any difference in participants' DM uses, fluency, and speaking anxiety is not attributable to proficiency. Besides, OPT is highly efficient since it provides instant scores at the end of the test which consists of both grammatical form and pragmatic meaning. Thus, it is believed to give "a reliable indicator of general baseline ability" [38].

2.4 Data collection process

Data were collected through both face-to-face and online methods, with the researchers taking measures to ensure consistency, reliability, and participant engagement throughout the process. In face-to-face sessions, participants were first briefed about the study in a classroom setting and then completed consent and demographic forms via Google Forms. The video narration task was conducted individually in a quiet office, where participants watched a video on the researcher's computer and were prompted to narrate the incident as if reporting to a police officer. Their responses were audio-recorded using a phone. Participants subsequently completed the anxiety scale and the proficiency test. To ensure test integrity, the researcher monitored participants, limited test duration to 30 min, and implemented security measures to prevent external assistance.

Online data collection involved one-on-one Zoom meetings. Participants were briefed about the study, provided informed consent, and completed the demographic form. The video narration task was conducted via screen sharing, with participants prompted to describe the event after watching the video. Their responses were screen-recorded. Participants then completed the anxiety scale and the online-administered proficiency test. To maintain the integrity of the online test, participants were monitored through their active cameras and microphones, and test access was restricted.

By employing both face-to-face and online methods, the study ensured diverse yet controlled data collection environments, enabling valid comparisons between the two participant groups. Figure 1 below indicated the order of data collection tools.



Fig. 1 Synopsis of data collection

Table 2 Eligibility criteria for Discourse Markers

Inclusion criteria	Exclusion criteria
Used to connect two clauses and maintain coherence in discourse	Used as a lexical modifier rather than linking ideas
Used to connect two events or ideas, contributing to coherence and discourse flow	Used to connect nouns and noun phrases in a list, serving as a conjunction
Used to indicate the progression of events in a narrative, marking a temporal sequence	Used in non-temporal contexts that do not contribute to narrative flow
Used to signal a transition or shift in conversation, or to indicate processing or agreement	Used as an adjective in a sentence, without any discourse organizing function
Used as a filler or hedge, influencing the discourse structure without adding meaning.	Used in a semantically meaningful context (expressing similarity or comparison)

2.5 Data analysis

Data gathered via the participants' video narration task, the Language Situations method [58] were transcribed verbatim. Transcriptions, a critical step in discourse studies, provide written representations of spoken language for research [14]. A total of 6790 s (407,400 milliseconds) of participant speech was transcribed: 3101 s (186,060 milliseconds) for the face-to-face group and 3689 s (221,340 milliseconds) for the online group. Combined, participants produced 7029 words, with 3059 from the face-to-face group and 3970 from the online group. Words were counted verbatim, excluding hesitation markers, fillers, or partially uttered words.

The transcription process involved listening to audio recordings and reviewing transcripts multiple times to ensure accuracy. Grammatical errors were preserved, and participants' personal details were anonymized by assigning code names. Transcription inclusion and exclusion criteria were applied, focusing on fully uttered words and relevant DMs (Table 2).

DM tokens and their frequencies were identified using AntConc (version 3.5. 8) software [2], which allows users to analyze keywords in context. To protect confidentiality, participant details were omitted in AntConc outputs. DMs were identified and classified based on Fung and Carter's [18] multi-categorial framework, which categorizes DMs by function (interpersonal, referential, structural, and cognitive). Words with multiple uses (e.g., "so," "and," "like") were carefully analyzed to distinguish DMs from non-discourse marker functions, guided by Schiffrin [17, 18, 48]. For instance, "so" in "…so the dog chased the ball" serves as a DM, connecting ideas and maintaining conversational coherence. In contrast, "it was just like so tense" uses "so" as a lexical modifier, not a DM. Similarly, "like" in "it was like a small accident" conveys approximation and is non-discursive, whereas in "if the first car didn't, like, stop" it acts as a discourse marker, signalling hesitation or emphasis.

Quantitative data were analysed on the Statistical Package for Social Sciences (SPSS) 27.0. Data from FLCAS and transcriptions were analysed to address research questions tapping the relation among DM uses, FLSA, and fluency. For speaking anxiety comparison, The Kolmogorov-Smirnov and Shapiro-Wilk tests confirmed non-normal

data distribution. Consequently, the Mann-Whitney U test was employed to compare speaking anxiety levels between face-to-face and online groups. For fluency analysis, total word counts and speaking durations were calculated for each group. Fluency is a highly complex construct tapping cognitive, social, and psychological dimensions. For this research study, we wanted to keep it in its simplest measurable form by limiting its definition to two fundamental elements: linguistic forms and timing. Thus, sticking to these two metrics only enables us to operationally define it in more concrete terms while ignoring the fine distinctions among further metrics. Correlation tests on SPSS were run to understand the relationship between fluency measures (word count and speaking time) for online and face-to-face participants.

To investigate DM uses, AntConc and Microsoft Word softwares were used to identify frequently used DMs. Percentages of DMs were calculated for comparative analysis between the groups. DMs were further categorized by type [18] and analyzed against participants' anxiety scores using non-parametric correlation tests in SPSS.

Finally, to unearth what L2 learners think about the possible sources of their anxiety, data obtained from semi-structured interviews. Conducted in Turkish and translated into English, the five open-ended questions were analysed using thematic analysis [9]. For each question, the translated responses were initially gathered in an Excel sheet for thematic analysis. The researchers manually conducted the analysis by first thoroughly reading and re-reading the responses, ensuring independent recognition of key points. Thematic analysis involved six steps: Translating responses, familiarizing with raw data, generating initial codes, grouping related codes into themes, reviewing themes, defining and labelling themes. The process allowed for detailed identification of patterns in participant responses, which were manually coded and grouped into themes. Thematic findings were then linked to research questions and quantitative results for comprehensive insights.

3 Results

In order to identify the frequency of DM uses AntConc software was employed. Then, to understand the relation between FLSA and DMs in online and face-to-face L2 English speaking classes, correlation analyses were run in SPSS. The results indicated different patterns for two distinct settings. Among four categories of DM, referential and cognitive particles were found to be moderately and negatively associated with anxiety in face-to-face settings (r = -0.343, p = 0.03 and r = -0.454, p = 0.003 respectively). More explicitly, those learners with high anxiety levels in the face-to-face class were observed to use fewer DMs such as "because" and "well" whereas interpersonal and structural markers were not affected by the anxiety level in the same setting. On the other hand, no statistically significant correlations were found for any of the DM types in the online class. Thus, the use of two types of DM was moderately and negatively associated with the L2 learners' nervousness in the face-to-face classroom.

3.1 Difference in terms of FSLA

A Mann-Whitney U test was performed to understand if two groups would differ in their anxiety levels excluding DM use as a construct. The analysis revealed no statistically significant difference in anxiety between groups U = 765.00, z = -0.34, p = 0.736, r =. 04, indicating a negligible effect. The mean ranks were 39.63 for the face-to-face group

Table 3 Discourse markers frequencies and type/token ratio

	AND		THEN		I THINK		BUT		OKAY	
	Token	Ratio	Token	Ratio	Token	Ratio	Token	Ratio	Token	Ratio
Online	148	38.5	41	10.6	32	8.3	23	5.9	15	3.9
Face-to-face	168	60.8	28	10.1	28	10.1	5	1.8	12	4.3

(sum of ranks = 1,585.00) and 41.38 for the online group (sum of ranks = 1,655.00). In brief, L2 learners in both groups demonstrated minimal impact of teaching medium on their anxiety levels.

3.2 Difference in terms of DM use

Analyses in AntConc revealed that 660 tokens were used in total (online group: 384 and face-to-face group: 276). Most frequently employed ones were "and", "then", "I think", "but", and "okay" respectively. As it is also obvious with total type/token ratio, the online group produced more DMs when compared to the face-to-face group. Table 1 indicates the distribution unearthing that "and" was the most frequently used DM in both groups. Moreover, among all DM types, structural DMs such as "and" and "then", which are used to organize discourse units, were far more repeatedly exploited than others (Table 3).

3.3 Fluency

Total speech time in milliseconds and total word counts were used to analyze fluency in both groups. Correlation analyses performed for each group indicated a strong and positive correlation coefficient for speaking time and word count in the face-to-face group ($r = 0.819$, $p < 0.01$) than the online group ($r = 0.584$, $p < 0.01$). This suggests that L2 learners in face-to-face settings performed more fluent and continuous speech while the online L2 learners were found to be less fluent when the fluency is restricted to speaking time and word count. In a similar vein, fluency might be adversely influenced by the technical properties such as connection problems and the lack of verbal cues slowing down the pace of the L2 speaker in the online setting.

3.4 Perceptions

Taking Braun and Clarke's [9] thematic analysis into account, transcriptions derived from semi-structured interviews were scrutinized subsequently. Findings underscored three key issues as to the sources of FLSA irrespective of the medium of learning. The first and most frequently mentioned one was personal traits such as L2 proficiency deficit, lack of self-confidence, and having difficulties in controlling feelings. As predicted, more participants from the face-to-face group reported that they experience FLSA due to their personal traits. For instance, FP15 says "I feel anxious when someone uses words I don't know. I worry about not being able to respond because I don't understand the speaker.". Similarly, another participant OP07 states "I don't feel confident because my vocabulary is limited, I am afraid not being able to express myself."

The second source was stated as the societal reasons such as peer-pressure and teachers' judgemental feedback. In both groups, peer-pressure was expressed as "being laughed at due to mispronunciation" or "feeling anxious when the person I'm talking to speaks flawlessly". To illustrate another example for societal reasons, FP34 mentions "If there are people around me who speak fluently, I feel more anxious. Especially if the

person does something to belittle me or laughs at my mistakes, it makes me feel even worse and triggers my social anxiety."

The last source, labelled as miscellaneous, was diversified in terms of sources but included cultural concerns predominantly. For instance, one of the participants from the online group expressed that "Speaking a language whose culture I don't know makes me feel unsure about how my words will be perceived." Shortly, the findings highlighted three key issues as personal traits, societal reasons, and others. Although more L2 learners from the face-to-face group addressed the impact of individual factors on FLSA, similar concerns dominated the data obtained from both groups.

4 Discussion

Guided by the question how FLSA and DMs use interact in online and face-to-face L2 English classes, the study revealed that FLSA does not differ context-wise whereas DMs does. In particular, L2 learners reported approximately the same levels of anxiety in both contexts although those in face-to-face groups with higher FLSA were found to produce fewer referential and cognitive DMs. However, L2 learners in the face-to-face classes were challenged with referential and cognitive DM uses which are directly related with constructing and linking their ideas. As suggested by one of the reviewers, it is possible that participants produced fewer interpersonal and cognitive markers than they would have in more casual conversation, and that this effect differed systematically between the online and face-to-face groups due to differences in perceived formality or social presence. Thus, tendency to use fewer referential and cognitive DMs might be task-dependent. Conclusively, in contrast with many other studies [4, 24, 45] the current study disclosed that online and face-to-face learning settings do not differ in alleviating the tension of L2 speaking.

The divergence between online vs. face-to-face classes was observed via DM analyses exclusively. L2 learners in online settings were observed to generate more DMs although a typologically more restricted set of DMs was preferred. Factors such as reduced emotional and cognitive burden, limited social contact, and flexibility in turning off cameras could have yielded wider opportunities to produce DMs more recurrently. However, as they were not directly measured, they could be only possible contextual explanations. Another possibility is that differences in overall speech production or task engagement could be contributed to the higher DM frequency. As noted by one of the reviewers, online learners' more frequent use of DMs might be equally associated with either their anxiety more effectively managed in online settings or different kinds of cognitive demands in the online environment. Although L2 learners were found to employ different strategies in dealing with FLSA for distinct contexts such as online and face-to-face [5], the source of such variation is not traceable via this data set.

With regard to L2 fluency, the stronger face-to-face correlation indicates a more consistent relationship between speaking time and verbal output. Furthermore, the greater total word production observed in the online group does not necessarily show greater fluency because total production is partly dependent on speaking time. Still, when fluency is conceptualized based on speaking time and linguistic output excluding factors such as articulation rate and pause frequency, the face-to-face context yielded more verbose and uninterrupted speech. In a similar vein, many studies argue that despite the advantages closely associated with low levels of stress, online contexts tend to be

perceived as unnatural communication settings [8, 12, 25], which might one of possible reasons for this observation. Overall, the results highlighted the context-sensitive relationship between affect and discourse marker use. In particular, the negative associations between anxiety and referential cognitive DMs were observed only in the face-to-face condition, whereas no significant associations emerged in the online condition.

In the qualitative data, the sources of FLSA were stated as personal, social, and a variety of other factors. Although both groups underscored characteristics such as self-confidence and L2 proficiency, the participants from the face-to-face class referred to them more often. Furthermore, hindrance stemming from social relations such as peer-pressure and inappropriate teacher feedback was noticed as another significant source for both groups. Besides, teacher-induced anxiety might stem from several reasons such as strict adherence to old-fashioned teaching methodologies, lack of experience, unequal turn-distribution [27]. Literary works highlighted how communal dimensions of a speech context including interlocutors such as teacher and peers impede L2 speaking [15]. Similarly, Tanveer , [54] points out six sources of FLSA: "learners' own sense of self, their self-related cognitions, language learning difficulties, differences in learners' and target culture, differences in social status of the speakers and interlocutors, the fear of losing self-identity" (p. 3). This study lends further support for individual and social factors which obviously dominate causes of anxiety induced foreign language speaking performance.

Given the divergent findings unique to each teaching context, teachers might devise different sets of tasks for two classes. Instead of preferring one over the other, they may employ diversified tasks in each. For instance, face-to-face contexts might be used to stimulate fluency while online classes might involve explicit teaching of DMs. Likewise, to reduce teacher and learner induced anxiety, less threatening and more positive classroom settings might be encouraged by constantly emphasizing that pronunciation errors and communication breakdowns are part of linguistic development. Likewise, affective regulation strategies such as mindfulness which was found to mitigate FLSA [28] could be incorporated in EFL classes.

Despite the robust conclusions drawn from findings, this study is not without its limitations. Further studies might recruit more participants to have more generalizable results. Likewise, varied online contexts as synchronous and asynchronous, different proficiency levels, and divergent age groups might also be targeted to check whether the same conclusions drawn from this study hold true for these circumstances as well.

5 Conclusion

The current study revealed that FLSA is traceable via DM preferences and this interaction is context-dependent. More specifically, this finding suggests a direct relation between two constructs. For instance, DMs might be used either as a diagnostic tool for teachers to identify anxious learners, or alternatively DM instruction could be integrated into speaking classes as a form of anxiety management training. More specifically, online and face-to-face contexts had no statistically significant impact on the heightened speaking anxiety. However, they showed distinct patterns against DM uses and fluency. Face-to-face classes were deemed to yield fewer referential and cognitive DM uses whereas they were found to have an impact on fluency in terms of the number of the lexical items

produced and speech time more than online contexts. Hence, such constructs might be employed to mitigate FLSA under distinct circumstances.

In conclusion, the study demonstrates that while the mode of instruction does not significantly affect the overall level of speaking anxiety, it does differentially have an impact on the use DMs and fluency measures. Specifically, face-to-face settings tend to suppress the frequency of referential and cognitive DMs, which are linguistic tools speakers use to organize and manage discourse. Furthermore, face-to-face instruction impacts fluency (i.e. when defined in terms of time and number of linguistic outputs) more markedly than online classes. That is, a greater number of lexical items were produced and longer speech times were observed in these environments. EFL learners might feel more comfortable or motivated to elaborate and extend their speech when physically present with interlocutors. Consequently, the distinct influences of instructional context on DM usage and fluency suggest that tailored pedagogical strategies could be employed to address FLSA in EFL settings.

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Author contributions
G.E.: conceptualization, supervision, writing-review & editing; B.Y.: investigation, formal analysis, writing-original draft.

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Data availability
Data are available upon request to the corresponding author.

Declarations

Ethics approval and consent to participate
The participants were protected in accordance to the ethics guidelines and the details were described in the section on participants. Ethical approval for the research was obtained from the Institutional Review Board at Yıldız Technical University, Istanbul with an issue number 2023-12 on December 5, 2023. The study was conducted in accordance with the Declaration of Helsinki and IRB guidelines of Social Sciences Institute at Yıldız Technical University. Written informed consents were obtained from all participants prior to data collection by the researchers. Participation was on a voluntary basis and participants were informed that they might leave at any stage of the study. Anonymity and confidentially was ensured by not requiring any personal information throughout data collection. Since there were no vulnerable populations or children, obtaining additional guardian permission was not necessary. Also, no rewards or financial incentives were offered for taking part not to bias research results.

Consent for publication
Not applicable.

GenAI use disclosure
The author(s) declare(s) no use of generative AI.

Competing interests
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