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Author-Related Concepts in Academic Writing Revisited: A scoping review

Elena Tikhonova ¹, Lilia Raitskaya ²

¹ Peoples' Friendship University of Russia (RUDN University)

² Moscow State Institute of International Relations (MGIMO University)

ABSTRACT

Introduction: Abundant linguistic devices are applied in academic writing to communicate the opinion and valuations of the authors and engage with their readers. The concepts of author's voice, stance and identity stand out among numerous notions describing various aspects related to the author in the written academic discourse, though no reviews were identified to synthesize them within one review.

Purpose: To synthesize the knowledge on the concept of author's voice, stance and identity in the international publications with a view to defining frequently and interchangeably used terms.

Method: This scoping review sticks to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) extension for Scoping Reviews, the framework proposed by Arksey and O'Malley (2005) and PCC framework. The review synthesized 40 publications on the author-related concepts indexed in the Scopus database. The eligibility criteria were identified, including timespan (2000-2025), languages (English), types of sources (full-time articles and reviews), areas of research (social science; arts & humanities).

Results: The sources were distributed among three thematic clusters: (1) Identity in academic writing and author-related concepts; (2) Authorial voice in academic discourse; (3) Author's stance. The data extracted from the documents under review on the key author-related concepts in academic writing (author's voice, stance and identity) allowed to sum up the definitions and major features supporting the understanding of those concepts. The current scoping review proved that the terminology in the field is rather unclear and ambiguous. The key concepts tend to be used interchangeably, though with more focus on the components of the concepts and empirical studies of relationships among the author-related concepts. The recent publications are shifting towards more complex and comparative studies.

Conclusion: The findings of this review may become the background for future research on authorial voice, stance, identity in academic discourse as well as other author-related concepts.

KEYWORDS

authorial voice, author stance, writer's identity, academic writing, academic discourse, meta-discourse markers, engagement markers

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Correspondence:
Elena Tikhonova,
etikhonova@hse.ru

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INTRODUCTION

In academic writing, authors communicate their results of research and views to their readers, applying various linguistic mechanisms (Shen & Tao, 2021), including discourse and metadiscourse markers (Barbara et al., 2024), grammatic constructions, lexical bundles, modal phrases and verbs, passive voice (Baratta et al., 2024). As in any communication, there are many components and devices that relate to authorial presence in the academic text. Writers turn to them

to reveal their judgements, viewpoints and evaluations and to engage with their readers (Hyland, 2005).

The author-related concepts got into focus in the second half of the twentieth century. Though, an increase in research began at the turn of the 21st century. There are at least two notable and overlapping rises in the focused interest in author-related concepts in academic writing. The first period started in the late 1990s and lasted till 2015 (Vassileva, 1998; Ivanič, 1998; Ivanič, 2004; Ivanič &

Camps, 2001; Matsuda, 2001; Fløttum, 2006; Matsuda & Tardy, 2007; Hyland, 2008; Barrata, 2009; Fløttum, 2010; Hyland, 2012; Zhao, 2013, etc.). The terminology in this field became quite abundant during this period, and despite the previous research it was still is rather vague with occasionally interchangeable uses (Mhilli, 2023). The latest uprise began in 2015 and has lasted so far (Hyland, 2015; Stock & Eik-Nes, 2016; Hyland & Jiang, 2018; Azar & Hashim, 2022; Mhilli, 2023; Yasuda, 2022; Zhang, 2023; Ryan & Wilde, 2024; Sun et al., 2024; Zhang et al., 2024, etc.). The trends within the current timespan are mixed, with more studies focused on several concepts (Alghazo et al., 2021; de Magalhães et al., 2018).

Within the pilot searches for author-related concepts, we outlined a list that included:

- (1) author (variants: author's/ authorial/ writer/ writer's) voice;
- (2) author (variants: author's/ authorial/ writer/ writer's) identity;
- (3) author (variants: author's/ authorial/ writer/ writer's) stance (variants - though rarely used: position/ posture);
- (4) engagement with readers;
- (5) self-reference;
- (6) self-mention;
- (7) interaction.

The most thoroughly studied of the concepts are those of author's voice, stance and identity. Rare or more occasional terms included in the list above are considered only to support the selected concepts.

Authorial voice is constructed to express opinions of writers (Hyland, 2012), encompasses the idea of agency, identity and authorship (Hanauer, 2015), and amalgamates "discursive and non-discursive features" (Matsuda, 2001). Hirvela & Belcher (2001) define voice as the ways "how writers establish an authorial presence or identity in their writings". The voice system entails "multiple components" and its construction "involves diverse agents (e.g., writers, peer reviewers, and readers)" (Fogal, 2020). Some researchers note that authorial voice is influenced by "disciplinary and socio-cultural factors" (Dong et al., 2023). Moreover, voice like other author-related concepts is studied from various perspectives (Alghazo et al., 2021), including ideology of Western individualism, social perspective, dialogic perspective, theories of metadiscourse and intercultural rhetoric (Connor, 2011). Other authors (Matsuda & Tardy, 2007; Tardy, 2012) see authorial voice in written scholarly communication from the individual, social, dialogical and other perspectives.

A historic view of author's identity and voice represents the concepts as interchangeable terms (Mhilli, 2023). Though, a few academics admit very close links between the concepts, considering that *identity* can be expressed through voice

(Li & Deng, 2021). Tang and John (1999) construe identity turning to author's roles, including an author as a representative of a group, the guide through the text, the architect of the text, the recounter of the research process, the opinion-holder, and the originator of an idea (Tang & John, 1999). Ivanič (1998) offers four dimensions of identity to explore the concept. They entail authorial self, autobiographical self, discursal self and the relational dimension (Ivanič, 1998).

Another concept, *interaction* includes stance and engagement (Hyland, 2005). Stance is considered as modes in which "writers reveal personal thoughts and feelings within their texts" (Baratta, 2009). *Stance* is researched in the context of both authorial voice and identity. Hyland (2012) seems to regard stance at the word and sentence level and voice at the textual and discursal level. Thus, voice is treated as a broader concept. Stance is more writer-oriented whereas voice covers both – the writer and the reader. *Engagement* describes the modes authors apply to interact with readers and urge them to participate in the discussion of the research (Mo & Crosthwaite, 2025).

Self-mention signals that the author has a strong voice, forming an integral part of identity construction (Stock & Eik-Nes, 2016). *Self-reference*, including self-citation, is constructed via a distribution of singular (I, me, my) and plural (we, us, our) pronouns and determiners as well as other references to the authors (Hyland, 2005). Writer self-reference is defined as "implicit and nuanced position statements constructing writer self-image" (Hyland, 2012).

The realm of research on author-centered concepts in academic writing is rather broad, with reviews synthesizing the current knowledge in various aspects in the period between 2009 and 2024: *on authorial voice* – "The construction of author voice by editorial board members" (Tardy & Matsuda, 2009), "The construction of authorial voice in writing research articles: A corpus-based study from an APPRAISAL theory perspective" (Zhang & Cheung, 2018), "Authorial voice in writing: A literature review" (Mhilli, 2023); *on writer's stance* – "Systematic Literature Review of Crosslinguistic Analysis of Stance Markers in EFL Learners' Academic Writing in English" (Zhang et al., 2024), "The research trends of corpus-assisted stance research (2004-2023): a systematic literature review" (Sun et al., 2024); *on self-reference* – "Self-reference in research articles across Europe and Asia: A review of studies" (Mur-Duenas & Sinkuniene, 2016); *on writer's identity* – "Identity Construction in Academic Writing of Student Writers Who Use English as an Additional Language: A Literature Review" (He, 2020), "Analysing Authorial Identity Construction in the Review Article Genre in Applied Linguistics" (Azar & Hashim, 2022).

The enumerated reviews dwell upon various aspects of the authorial concepts. We failed to find any complex review of author-related concepts in academic writing. The present review aims to update the synthesis of the existing knowl-

edge on the major author-related concepts (author’s voice, stance and identity) in the international publications with a view to defining frequently and interchangeably used terms. By this publication, the reviewers are willing to draw the JLE readers attention to the domain as a promising research field for the journal. To attain the objective, the review was guided by the following research question:

RQ: What shifts in the key concepts related to the author (author’s voice, stance and identity) have been fixed in academic writing?

METHOD

Protocol

Prior to starting the present scoping review, a research protocol was meticulously developed. The reviewers hereby certify that this review report constitutes a faithful, precise, and transparent description of the conducted review.

Table 1
Eligibility criteria

Criterion	Inclusion	Exclusion	Rationale
Problem	Ways of building and expressing author-related concepts in academic writing	Other aspects of academic writing	The research related to the problem informs authors on better ways of communicating ideas to their readers and patterns of disciplinary metadiscourse in scholarly publications
Concept	Author-related concepts in academic writing	Other concepts	The aim of the review is to synthesize the bulk of the recent knowledge on the author-related concepts in academic writing
Context	Academic Discourse of Scholarly Publications in English	Other discourses and languages	Focus of the review is on author-related concepts, their interrelations and elements in English-language academic discourse
Language	English	Other languages	English serves as a lingua franca of international science. In addition, the author-related concepts are considered within a specific language and discourse. In the present review, it is the English-language academic discourse
Time period	2000-2025	Before 2000	The review aims to synthesize the most essential recent publications on the theme
Types of sources	Full-text articles and reviews from peer-reviewed journals	Unavailable sources No access to full texts Other types of journals	The purpose is to gather Scopus-indexed available sources relevant to the keywords
Geographical location	Any location	None	Getting international perspective
Database	Scopus	Other than Scopus	The Scopus database has an impressive international perspective both by countries and high-profile sources where research on academic discourse and academic writing is published
Areas of Research	Social Science Arts & Humanities	Other Research Areas	Author-related concepts are studied within Social Sciences and Arts & Humanities (linguistics and communication)

No deviations from the protocol were registered. Any departures from the original study design were appropriately described. We opted for the scoping review method as described in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) extension for Scoping Reviews (Tricco et al, 2018), and the framework proposed by Arksey and O’Malley (2005).

Eligibility Criteria

The problem, concept, and context (PCC) were defined to establish an effective search strategy (see Table 1), with a rationale for each criterion. A discussion and some calibration exercises were performed before the criteria were finally established.

Search Strategy

The objective, review question, and existing literature were studied to select the most appropriate keywords to achieve effective searches. The keywords were calibrated in pilot

pre-review searches to establish the appropriate keywords. The following strings of keyword variations were applied to find the documents in the Scopus database:

- “author OR author’s OR authorial voice”
- “author OR author’s OR authorial stance”
- “author OR author’s OR authorial identity”

The searches were conducted by both authors simultaneously on the same day to identify the publications for this scoping review. All relevant documents were included subject to eligibility criteria and full-text availability.

Study Selection

Both authors identified the publications guided by the eligibility criteria and keywords. The eligibility criteria were primarily applied to the identified publications via the Scopus filters (time period, languages, subject areas, type of publications). Each reviewer screened the titles and then abstracts to eliminate the irrelevant documents tagging the documents with “to include” or “to exclude” marks. All disagreements were solved by mutual consent. The full texts of the selected documents were found at the publishers or the authors were approached via academic networks. All full texts were thoroughly and independently analysed by each reviewer to finally identify the eligible publications.

Data Extraction

Pilot searches, screening and the research questions made us identify the structure of the extracted raw data for the review: (1) data from the documents under review on the key author-related concepts in academic writing – author’s voice, stance and identity – including definitions and major features supporting the understanding of the concepts; (2) data from the documents under review that bring other notions related to the author to the fore, if they are supportive in understanding the ways authors expose their position in the text.

Data-charting forms were jointly developed. The authors independently charted the data extracted from five documents as a pilot calibration, discussed the results and updated the data-charting form in an iterative process. The ultimate data included in the form are enumerated in Table 2.

Data analyses

Descriptive analyses were done and presented in different tables and an appendix. All the documents under review were distributed among the thematic clusters that had been visualized via VOSViewer software and refined through the analyses of the full texts.

Table 2
Data-Charting Form

Data to be extracted	Notes to reviewers
Title of study	
Author(s)	
Year of publication	
Type of publication	article or review (according to an inclusion criterion)
Author-related concepts:	Identify the prevailing focus if more than one concept is studied
- authorial voice	
- authorial stance	
- authorial identity	
Study objective	State if identified unclearly
Definitions	Author’s and cited definitions
- authorial voice	
- authorial stance	
- authorial identity	
Components and important features	Author’s and cited components and important features
- authorial voice	
- authorial stance	
- authorial identity	

RESULTS

Search and Selection Results

The searches were conducted among the titles and keywords of Scopus-indexed publications as of February 28, 2025. The searches on “author OR author’s OR authorial voice”, “author OR author’s OR authorial stance”, and “author OR author’s OR authorial identity” totally brought 882 titles. 123 duplicate documents were removed, leaving 759 publications before Scopus filters were applied. The following inclusion criteria were used coinciding with the Scopus filters: time period 2000-2025; publication types – articles and reviews; Social Sciences and Arts & Humanities (subject area); and English (language). The filters reduced the amount by 317 documents to 442.

Visual scanning of the 442 titles and abstracts was performed to eliminate another 264 publications that were not eligible for the review. The sample was reduced to 178 documents. The full texts of 98 publications were received both via open access and on request from their authors in the Research Gate Network. After analysing data from the 98 full texts, another 58 publications were eliminated as we failed to find any data to the point. The total number of the publications included in the review was forty (Appendix 1).

The PRISMA flow-chart (Figure 1) depicts the complete identification and screening process.

A Bibliometric Analysis

After screening, the authors selected 40 documents from the Scopus. The publications were distributed unevenly. The trend towards research on author-related concepts was not prominent (from one to eight publications annually) during the review timespan. The peak with eight documents was registered in 2023. The prevailing publication type was the “article” (n=38). Two reviews were included – “Authorial voice in writing: A literature review” (Mhilli, 2023) and “Discoursal scholarly identity in research writing” (Qi & Zhao, 2023).

The most prolific authors (Figure 2) included K. Hyland (n=3), L. Deng (n=2), F. Jiang (n=2), H.J. Yoon (n=2), and C.G. Zhao (n=2). The most highly-cited publication headlined “Hedging and boosting in abstracts of applied linguistics articles: A comparative study of English- and Chinese-medium journals” (Hu & Cao, 2011) had 234 citations as of February 28, 2025.

Most publications came from China (n=13), the USA (n=11), and the UK (n=6) (Figure 3). All 40 documents were attributed to Social Sciences (n=40), 39 documents simultaneously were marked as Arts and Humanities. Three and two publications related to Computer Science and Psychology respectively.

Figure 1

Selection of the Publications for the Review – PRISMA Flow-Chart

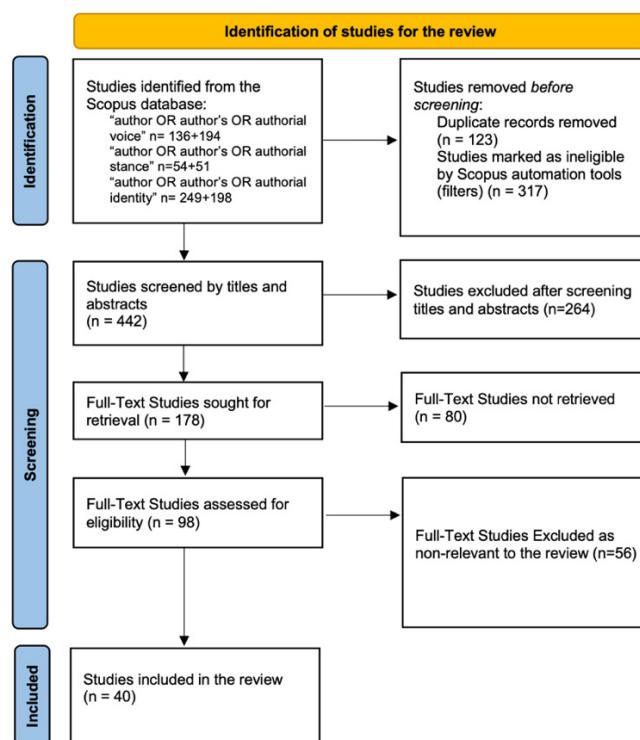
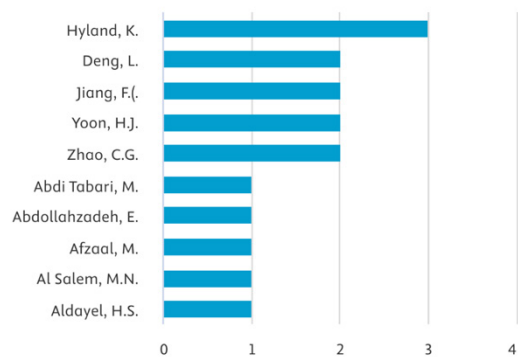
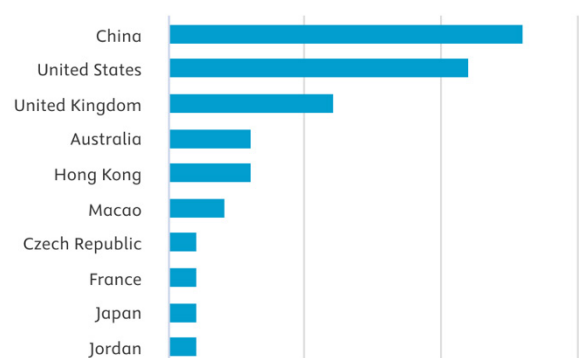


Figure 2
Scopus-Indexed Research on Author-Related Concepts: Most Prolific Authors



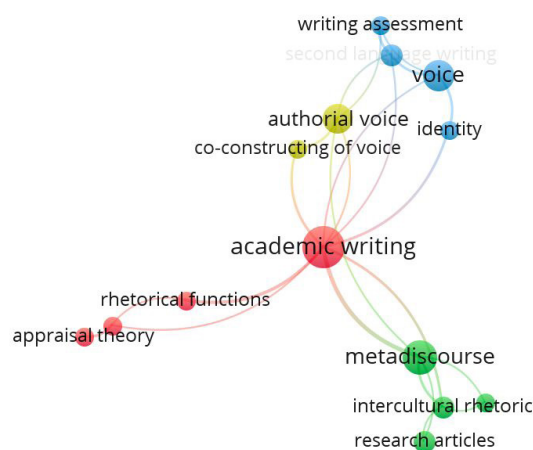
Note. Scopus Database as of April 27, 2024

Figure 3
Scopus-Indexed Research on Author-Related Concepts: Geographic Distribution



Note. Scopus Database as of April 27, 2024

Figure 4
VOSviewer Visualization of the Review Thematic Clusters



The VOSviewer software’s analysis of the metadata from the 40 selected documents constructed a structured landscape of thematic clusters, each colour-coded to denote a specific domain of the review (Figure 4). The density of terms started from 6. The software made up six clusters. Though, there are only four clusters displayed in Figure 4 with two clusters completely detached and separated from the rest. VOSviewer visualized those two clusters at a distance. The other four clusters partially overlapped (those marked in blue, yellow, red and green).

The blue cluster comprised voice, identity, and writing assessment. It also included second-language writing. The yellow cluster focused on authorial voice. The green cluster represented metadiscourse, intercultural rhetoric, and research articles. The red cluster is connected to rhetorical functions and appraisal theory. Two out of the six clusters

are not linked to the bulk of the publications, with the turquoise cluster covering stance and the violet cluster linked to academic discourse. The two separated clusters were likely to be linked to the rest in some ways if compared on a wider sampling of publications. The screening of the full texts of the documents under review lead to better understanding and refining of the thematic clusters that were finally boiled down to the following three:

- Cluster 1. Identity in academic writing and author-related concepts.
- Cluster 2. Authorial voice in academic discourse.
- Cluster 3. Author’s stance.

The documents were distributed among the clusters based on the keywords and contents (Table 3).

Table 3
Type and Distribution of the Documents under Review among Thematic Clusters

Documents under review	Cluster 1	Cluster 2	Cluster 3
	<i>Identity in academic writing and author-related concepts</i>	<i>Authorial voice in academic discourse</i>	<i>Author's stance</i>
Ädel, 2022	+	+	
Alghazo et al., 2011		+	+
Baratta, 2009	+		+
Barbara et al., 2024			+
Candarli et al., 2015		+	+
Chen, 2024	+		
Chen, 2020	+		+
Crosthwaite et al., 2017			+
de Magalhães et al., 2018	+	+	
Deng et al., 2024	+		
Doncheva-Navratilova, 2021	+	+	
Dong et al., 2023		+	
Dessen-Hammouda, 2014	+	+	
Hirvela & Belcher, 2001		+	
Hu & Cao, 2011	+		
Hyland, 2015	+		
Hyland & Jiang, 2023	+		
Hyland & Jiang, 2018	+		
Kashiba, 2024			+
Khamkhien, 2025			+
Lee & Ye, 2023		+	+
Le Ha, 2009	+	+	
Li, 2024	+		
Li & Deng, 2021	+	+	
Masuda & Tardy, 2007		+	
Mhilli, 2023	+	+	
Mu, 2024	+		
Pearson & Abdollahzadeh, 2023	+		
Qi & Zhao, 2023	+		
Ryan & Wilde, 2024		+	
Stock & Eik-Nes, 2016		+	
Sun et al., 2022		+	
Tan et al., 2025		+	
Xie, 2016	+		
Yang, 2016	+		
Yasuda, 2022		+	
Yoon, 2017		+	
Yoon & Tabari, 2023		+	
Zhang, 2023		+	+
Zhao & Wu, 2022	+	+	+

Identity in Academic Writing

The raw data defining the concept of author identity and outlining key features of the concept are displayed in Table 4. Authorial, author or writer is generally regarded as an independent concept. Though some researchers apply this term and authorial voice interchangeably (Stock & Eiknes, 2016; Hirvela & Camps, 2001), others consider identity through authorial voice or stance as means of expressing it in writing (Chen, 2020 – identity is integral to stance; Baratta, 2009 – stance is a component of identity; Dessen-Hammouda, 2014 – identity through voice; Mhilli, 2023 – voice as discursal realisations of writer’s identity).

Author identity is construed through discourse and “such concepts as ethos and voice” (Matsuda, 2015, p.141). Baratta (2009) defines identity as the writer’s sense of who the writer is. Chen (2020) describes academic writing as “a transaction of information”, where writers construct their identity and stance. Fostering agency, strengthening voices, and creating networking opportunities are outlined as critical to the development of identity (de Magalhães et al., 2018). Li (2024) adds comprising dispositions to behave in certain ways in academic writing where identity is constructed.

Author identity identity is the one that socially displayed in academic contexts. Ivanič (1998) contributed much to understanding of authorial identity. Author identity is estab-

Table 4
Defining the Concept and Outlining Key Features of Author Identity

Document	Other Researchers Cited in the Document	Definitions and Components	Essential Features
		Links to Other Concepts	
Ädel, 2022		Research writing involves both identity and rapport work while a largely detached style still needs to be maintained. This is especially the case where experts communicate with experts in the research article (RA)...	
Baratta, 2009		It seems... that personal identity is often integral to stance...	
	Ivanič, 1994 Ivanič, 1995 Ivanič, 1998	Ivanic (1994, 1995, 1998) argues that a writer’s lexical, syntactic and semantic choices within his/her writing help to construct identity...	
		...personal identity, the writer’s sense of who she is, is an obvious link to how the individual is revealed within the text...	
Chen, 2024	Ivanič, 1998	Adequate emotion expression, as one of the potent strategies in academic writing, can greatly assist writers in establishing their authorial identity (Ivanic, 1998) in effective writing...	
Chen, 2020		...stance - the viewpoint or perspective of the writer, which may be seen as a component of identity...	
	Tang & John, 1999, p.27-29	...six “roles” [of author identity]: author as “a representative of a group,” “the guide through the essay,” “the architect of the essay,” “the recounter of the research process”, “the opinion-holder,” and “the originator” of an idea...	
	Hyland, 2002	Hyland divides author identity into a set of functions: expressing self-benefits, stating a goal/purpose, explaining a procedure, elaborating an argument, and stating results/claims. Since these functions entail authority, and authority places the author squarely in a position of responsibility and accountability...	
de Magalhães et al., 2018	Kamler & Thompson, 2006	Kamler and Thompson argue that writing in doctoral research involves the “mutual construction of text and identity”...	
		A social approach to scholarly writing that involves interactions with peers, more experienced others and supervisors is likely to foster agency, strengthen novice writers’ voices and create networking opportunities, all of which are critical to the development of doctoral identity...	
Dessen-Hammouda, 2014		Writing is no exception to this behavior, and writers clearly portray aspects of their individual and social identity to readers through their voice...	
Hu & Cao, 2011		These differences in the nature and textual structure of empirical and non-empirical academic articles as well as in the corresponding identity assumed by their authors are likely to create different demands for authorial management of interaction with the imagined readers and manipulation of their reactions	
		through metadiscourse strategies such as hedges and boosters...	

Document	Other Researchers Cited in the Document	Definitions and Components	Essential Features
		Links to Other Concepts	
Hyland, 2015		<p>Writers, no less than speakers, construct texts which engage with readers and display a community-based competence and valued identity, as lexical choice, topic selection, conventions of argument, and so on also display an orientation and sensitivity to co-participants.</p> <p>...identity comprises dispositions to behave in certain ways, to make particular discourse choices in routine situations...</p> <p>Identity is said to be created from the texts we engage in and the linguistic choices we make, thus relocating it from hidden processes of cognition to its social construction in discourse.</p> <p>Generally... contemporary perspectives see identity as part of a social and collective endeavour created through participation in our social groups and the ways we are linked to situations, to relationships, and to the rhetorical positions we adopt in our routine interactions with others.</p> <p>...identity is what makes us similar to and different from each other and for academics it is how they both achieve credibility as insiders and reputations as individuals.</p>	
Li, 2024		<p>Academic writing, in particular, can be viewed as a process of constructing a scholarly identity, which refers to “scholars identifying themselves as members of certain academic communities that share the same use of language and ways of thinking by drawing on certain discourse and rhetorical conventions” (Shi, 2003, p. 370).</p> <p>...academic writers may encounter conflicts between their value systems and the expectations of their readers. To navigate this tension, studies have revealed that academic writers often engage in a complex negotiation of self-representation in their writing...</p>	
Li & Deng, 2021	Hyland, 2012	Academic writing is thus an act of identity construction...	
	Burgess & Ivanič, 2010, p. 235	<p>Writer identity ...refers to “the sorts of identities that are socially available in academic contexts, and the multiple selves that are constructed by writers’ selection of particular discursal characteristics in the design of their texts”.</p> <p>...stance, voice, self, and identity – are sometimes not only being simply used interchangeably without making an explicit connection between them, but also being used in a way that may cause misunderstanding...</p>	
	Ivanič, 1998	<p>Autobiographical self is a representation of how writers project their identities in real life or the sense of whom writers bring with them to the act of writing.</p> <p>Discursal self is an image of the writer that emerges in a specific text or the representation of the self, the view of the world, the values and beliefs that writers construct through their writing practices as well as their choices of wording and other semiotic means of communication.</p> <p>Self as author (or authorial self) is the presence writers construct for themselves as author of the text or the extent to which writers want to appear authoritative.</p> <p>...identity is regarded as a type of representation...</p>	
Mhilli, 2023		<p>The concepts of identity and voice in writing are often used interchangeably; however, some researchers differentiate the two conceptions, determining authorial voice as the writer’s identity reflected in writing.</p> <p>This literature review revealed that the concepts of voice and in writing is a broader conception which encapsulates authorial voice as discursal realisations of writer’s identity are closely related and are used interchangeably in [several publications]</p>	
	Ivanič, 1998, p. 23	Rose Ivanič proposes that identity in writing has four dimensions: ‘autobiographical self’, ‘possibilities for self-hood’, ‘discursal self’, and ‘self as author’	

Document	Other Researchers Cited in the Document	Definitions and Components	Essential Features
		Links to Other Concepts	
Qi & Zhao, 2023		This literature review identified three main streams of research that focus respectively on (1) the manifestation of a discoursal scholarly identity in academic written discourse, (2) the reconstruction of such an identity by readers, and (3) the construction of such an identity in and through social practices.	
		Based on these varied research interests, different terms have also been adopted to capture different aspects of the concept of discoursal scholarly identity	
		...the concept of discoursal scholarly identity refers to the image of a scholar as created and perceived on page through the use of particular discursive and non-discursive features...	
		...discursive features often include both linguistic choices (e.g., personal pronouns, hedges, and reporting verbs) and rhetorical choices (e.g., skillful use of topical sentences and organizational moves)	
	Matsuda, 2015, p. 145- 150	Non-discursive features, on the other hand, could be “document design and visual elements” (p. 145) or content-related elements... The former refers to formatting, italics, and image use, among other such elements, whereas the latter covers elements such as “breadth and depth of knowledge, topic choice, representation of the field, description of the research setting, theoretical frameworks, and research method” as shown in the text ...	

lished through roles, including author as a representative of a group, the guide through the text, the architect, the recounter of the research, an opinion-holder, the originator of an idea. Writer identity is constructed by means of lexical, syntactic and semantic choices (Ivanič, 1998). Adequate emotion expression is singled out as an effective strategy in scholarly writing to establish authorial identity (Ivanič, 1998; Chen, 2024).

Authorial Voice

Authorial voice has been on the agenda for over thirty years, though some foundations were laid much earlier (e.g. Bakhtin, 1981). The concept is approached from various perspectives determining the definitions and features that researchers choose to stick to in their studies (Appendix 2). In the publications included in the review and also publications cited in the reviewed documents, we found the following approaches: social perspective (Ivanič, 1998; Matsuda, 2001; Sun et al., 2022; Yoon, 2017; Zhang, 2023), social and cultural approaches, covering genre and contextual impact (Fløttum, 2006; Hyland, 2008; Fløttum, 2010; Candarli et al., 2015; Crosthwaite et al., 2017), interactional perspective (Hyland, 2008; Hyland, 2012); linguistic perspective (Ivanič & Camps, 2001; Baratta, 2009; Barbara et al., 2024). Author voice is characterised as an open and constantly changing construct, “a dynamic author-reader relationship” (Dong et al., 2023) that is influenced by disciplinary, social, cultural and other factors (Dong et al., 2023).

Voice forms an integral part of academic and scientific writing (Dressen-Hammouda, 2014). It is considered as an individual property of writing (Lee & Ye, 2023). Though, in the 1990s and in the early 2000s, some researchers doubted the concept scope as it was presented rather vaguely (Hirvela &

Belcher, 2001). The most-cited definition in the documents of the review belong to Matsuda (2001). The amalgamation of discursive and non-discursive features that are selected individually but from the socially accessible repertoires (Matsuda, 2001) is a definition from the social perspective. At least four publications in the review are based on this understanding of authorial voice (Candarh et al., 2015; de Magalhães et al., 2018; Dong et al, 2023; Matsuda & Tardy, 2007) (Table 5). Authorial voice is a way “to project selfhood” through linguistic devices, including hedge, booster, attitude, central point articulation, self-mention, reader pronoun, directive, shared knowledge (Lee & Ye, 2023). Voice may be seen as linguistic behaviour (Hirvela & Belcher, 2001).

Researchers tend to explain and define the concept of authorial voice through other related concepts. Voice may be realised via a writer’s engagement with viewpoints of others, communicated through a position or a stance taken (Sun et al., 2022; Yasuda, 2022; Candarh et al., 2015) or relates to authorial presence (Candarh et al., 2015; Hirvela & Belcher, 2001). Voice is essentially associated with links and relationships with others or with ideas (Yoon, 2017). It is based on the definition by Hyland’s model (2008) where voice incorporates stance (writer-oriented features of interaction) and engagement (reader-oriented features – the recognition of the reader’s presence and inclusion into the discourse). Voice may be individual and social, or discipline-related (Li & Deng, 2021), with many issues incorporated or associated. The latter are revealed through the roles a writer takes on (Stock & Eik-Nes, 2016). The positioning of authorial voice is built on Halliday’s seven functions of language (Halliday & Matthiessen, 2004) and entails ideational (the ways how writers approach the topic), interpersonal (the ways how writers interact with their readers) and textual types (Stock & Eik-Nes, 2016).

Table 5
Defining the Concept and Structure of Authorial Voice and Outlining its Key Features

Document	Other Researchers Cited in the Document	Definitions and Components
Candarh et al., 2015	Matsuda, 2001	The notion of 'voice' ...relates to authorial presence and stance... The use of markers indicating authorial presence contributes substantially to the success of a text. Voice encompasses the amalgamation of discursive and non-discursive features that language users select from socially accessible but constantly evolving repertoires
de Magalhães et al., 2018	Matsuda, 2001	Voice encompasses the amalgamation of discursive and non-discursive features that language users select from socially accessible but constantly evolving repertoires
Dong et al, 2023	Matsuda, 2001	Voice encompasses the amalgamation of discursive and non-discursive features that language users select from socially accessible but constantly evolving repertoires
Dressen-Ham-mouda, 2014	Belcher, 2007; Lillis & Curry, 2010	A general consensus today supports the idea that voice is relevant to academic and scientific writing, as seen for example in the high-stakes context of international scientific publishing
Hirvela & Belcher, 2001	Elbow, 1994 b, p.2	The term has been used in such a loose and celebratory way as to mean almost anything
Lee & Ye, 2023		Authorial voice as an individual property of writing is commonly understood as a way to project selfhood into the text by way of linguistic devices... Authorial voice: hedge, booster, attitude, central point articulation, self-mention, reader pronoun, directive, shared knowledge (Fig.1).
Matsuda & Tardy, 2007	Matsuda, 2001	...a socially oriented notion of voice—defined as “the amalgamative effect of the use of discursive and non-discursive features that language users choose, deliberately or otherwise, from socially available yet ever-changing repertoires”
Sun et al., 2022	Hutchings, 2014, p. 315	Voice...refers to ‘the student’s own views and to the ability to present other views as other voices’ ... In other words, it is students’ engagement with viewpoints of others and their evaluation of those viewpoints conveyed through taking a position or so-called stance of their own.
Yasuda, 2022	Thompson & Hunston, 2000, p. 5, p. 5	Authorial voice is considered to be the representation of a writer’s point of view or stance toward the propositions they adduce within a manuscript. ...a writer’s voice – a representation “of the writer’s attitude or stance towards, viewpoint on, or feelings about the entities or propositions that he or she is talking about”...
Yoon, 2017	Hyland, 2005	Voice “establishes relationships between people, and people and ideas”

One more aspect pertaining to authorial voice is citations in constructing an image (Zhao & Wu, 2022). Citing others is a way to position oneself vis-à-vis the cited scholars (Zhang, 2023). Citations fulfil a range of functions in academic texts in respect of author voice. Thus, manipulating citations and references helps create an authoritative voice (Sun et al., 2022). At the same time, citing is a device in constructing stance. Citations, a mechanism that positions a citing author in relation to other researchers, are studied through their functions (mainly attribution and evaluation) and help share or separate author’s stance from others’ opinions (Khamkhien, 2023).

Author’s Stance

“Stance is a process of adopting a point of view” towards the ideas and concepts and other researchers’ sticking to their own opinions (Hyland, 2005). Writers resort to taking stance when reveal their opinions, evaluations and feelings (Baratta, 2009). Other researchers add to this list attitudes, commitments concerning propositional content of a message (Biber, 1999), perspective (Strauss & Feiz, 2013), affect, appraisal, meta-discourse (Shen & Tao, 2012). As those stance statements are interpretative in nature, they “involve subjective judgements” (Hyland & Tse, 2013). In the wake of Hyland (2005), Crosthwaite et al. (2017) maintain that taking

stance is an interaction with writer-oriented features. From this perspective, stance incorporates evidentiality, affect and presence (Hyland, 2005). Stance is also considered as one of the two dimensions (the other one is engagement) that underpin authorial voice, where the former is “an attitudinal dimension” (Lee & Ye, 1999).

Stance is expressed through several features, including hedges, boosters, attitude markers and self-mentions (Alghazo et al., 2021; Candarli et al., 2017; Kashiba, 2024). Baratta (2009) outlines stance as “a continuum” starting from hedging to

reveal doubt regarding one’s claim to a viewpoint on other researchers’ positions, depending on the degree of commitment to a proposition (Lee & Ye, 2023). Various linguistic devices serve as means of constructing stance and modulating the extent of author’s commitment. Orthographic features are occasionally applied for constructing stance, including italics (to emphasize writer’s emotions) and single quotation marks (to signal irony or other attitudes in communication) (Baratta, 2009). The raw data that have been boiled down to the findings of the review on authorial stance are presented in Table 6.

Table 6
Defining the Concept and Outlining Key Features of Authorial Stance

Document	Other Researchers Cited in the Document	Definitions and Components Essential Features Links to Other Concepts
Alghazo et al., 2021	Hyland, 2005	Hyland (2005) defines stance as “adopting a point of view in relation to both the issues discussed in the text and to others who hold points of view on those issues” by means of stance features ...four features are used to express stance: hedges, boosters, attitude markers and self-mentions
Baratta, 2009		Stance refers to the ways in which writers reveal their opinions, evaluations and feelings on a given matter Stance can be regarded as the ways in which writers reveal personal thought and feeling within their texts
	Hyland & Tse, 2004	Hyland and Tse (2004) further describe stance as involving interpretive statements which necessarily involve subjective judgments Stance, then, would appear to fall along a continuum, ranging from hedging, in order to reveal doubt about one’s personal claims and/or show modesty for them (this might be seen as a potential way to attract new customers) to offering a personal opinion regarding the claims of others (I believe that his views no longer have relevance) Orthographic feature - Single quotation marks Rhetorical function: To reveal a personal style of communication, thus revealing the writer. To signal irony, thus showing disagreement with a particular viewpoint. Orthographic feature - Italics Rhetorical function: To emphasize the writer’s feelings on a given matter.
Barbara et al., 2024		Stance-taking in academic writing plays a crucial role in enabling tertiary academic writers to express their positions about their topics and other voices
	Strauss & Feiz, 2013	‘Stance’ is defined here as ‘the speaker’s or writer’s feeling, attitude, perspective, or position as enacted in discourse’
	Biber, 1999, p. 23	In academic writing, stance is considered vital because it expresses the communicator’s “attitudes, feelings, judgments, or commitment concerning the propositional content of a message”
	Shen & Tao, 2021	As a linguistic mechanism, stance is studied from the perspectives of evidentiality, affect, attitude, evaluation, appraisal, and meta-discourse.
Candarli et al., 2017		...stance can be realized via four resources: (1) self-mention (e.g. I), which concerns authorial presence through the use of first person pronouns; (2) boosters (e.g. definitely, obvious), which express writers’ involvement with the topic and certainty; (3) hedges (e.g. possible, perhaps), which tone down writers’ commitment, and (4) attitude markers (e.g. unfortunately, interesting), which reveal writers’ attitudes to the propositions

Document	Other Researchers Cited in the Document	Definitions and Components Essential Features Links to Other Concepts
Chen, 2020		...stance - the viewpoint or perspective of the writer, which may be seen as a component of identity - is expressed in academic writing, has produced an impressive amount of literature
	Perez-Llantada, 2008	...stance has been found to be expressed or projected by a variety of linguistic devices in an array of academic discourses: adjectives in several soft science disciplines
Crosthwaite et al., 2017	Biber, 2006, p. 87	...stance expresses a writer's 'personal feelings and assessments', including 'attitudes that a speaker has about information, how certain they are about its veracity, how they obtained access to the information, and what perspective they are taking'
	Hyland, 2005, p. 178	Hyland (2005) takes stance as 'writer-oriented features of interaction', which have three main components: evidentiality, affect and presence
Kashiba, 2024		<p>In recent decades, the notion of stance has been closely intertwined with concepts such as appraisal (Martin & White, 2005), evaluation (Thompson & Hunston, 2000), metadiscourse (Vande Kopple, 1985; Hyland & Tse, 2004; Hyland, 2005), and evidentiality (Chafe & Nichols, 1986).</p> <p>...this study views stance as an interactive tool used by reviewers and examiners to frame their evaluative discourse. Stance enables them to stamp their personal authority onto their academic criticism, conveying both epistemic and attitudinal positions and indicating the level of commitment to their comments.</p> <p>Stance includes four linguistic makers.</p> <ol style="list-style-type: none"> 1. Self-mentions refer to the extent to which writers/speakers choose to involve themselves in their discourse using first-person pronouns and possessive determiners (e.g., I, we, my). 2. Hedges signify uncertainty and enable writers/speakers to refrain from fully committing to their statements (e.g., may, probably). 3. Boosters convey certainty and assurance, strengthening the claims made by writers/speakers (e.g., in fact, must, definitely). 4. Attitude markers reveal the writers'/speakers' attitude toward propositions by expressing attitudinal feelings of agreement, disagreement, or surprise (e.g., surprisingly, prefer, unfortunately)
Khamkhien, 2023		...authorial stance is how authors position themselves relative to their sources, and it can emerge through citation functions such as attribution and evaluation. Citations allow authors to express their opinions or distance themselves from cited sources
	Coffin, 2009, p.170	...a writer's stance is an influential position a writer takes toward "the words, observations, viewpoints, and theories that comprise the referenced source"
Lee & Ye, 2023		Underpinning authorial voice are two different dimensions – stance and engagement – each of which is supported by different linguistic devices. Stance...is the degree of commitment to a proposition, evidenced by hedges, boosters, attitude markers, and authorial self-mention. With these textual devices in use, a writer modulates the extent to which he or she commits to a proposition, leaving an authorial presence in the text. ... stance is an attitudinal dimension, whereas engagement is an alignment dimension.
Zhang, 2023	Martin & White, 2005	Authorial stance was identified and analyzed based on the ENGAGEMENT system in Appraisal Theory
Zhao & Wu, 2022		The stance dimension concerns how writers present themselves and convey their ideas to the readers through the use of hedges, boosters, attitude makers and self-mention. The engagement dimension focuses on means to personal asides

DISCUSSION

The review results show that the vague realm of concepts related to the author in academic writing is developed by further studies along the routes offered in the previous periods. The recently published documents have not added essential contribution to the concept of author identity, focusing on

other aspects based the previously produced knowledge on author identity.

The articles published in the 2020-s focus on narrower aspects of the other concepts as well. They cover variations across languages and disciplines regarding visibility of writer and reader (Ädel, 2022), comparison of the concepts

(e.g. stance and engagement) between English and other language (Alghazo et al., 2022; Kashiha, 2024), various disciplines and levels of expertise of writers – novice and advanced authors (Barbara et al., 2024; Doncheva-Navratilova, 2021; Li & Deng, 2021; Yasuda, 2022; Dong et al., 2023; Khamkhien, 2025). The recent publications also dwell upon citations as a means of constructing authorial stance (Zhang, 2023; Sun et al., 2022; Mu, 2024; Khamkhien, 2025) and the author-related concepts in AI-generated academic texts (Tan et al., 2025).

Disciplinary and mature aspects of writers in constructing identity and voice were among popular topics in earlier publications as well (Hirvela & Belcher, 2001; Dressen-Hammouda, 2014; Candarli et al., 2015; Crosthwaite et al., 2017) that was in line with the previously published reviews (Zhang & Cheung, 2018; He, 2020; Azar & Hashim, 2022). The most cited authors enumerated in the previous reviews are overwhelmingly referenced to in the documents of the present review and consequently in this review, with K. Hyland, R. Ivanič, P. K. Matsuda, and C.M. Tardy forming the conceptual basis of the field.

The research on rhetorical construction of author identity, markers (hedges, boosters, stance markers, etc.) and other linguistic devices to construct authorial voice and identity were distributed more or less evenly in the period between 2010-till present (Baratta, 2009; Hu & Cao, 2011; Yang, 2016; Yoon, 2017; Crosthwaite et al., 2017; Barbara et al., 2024).

The author-related concepts in the recent publications are considered as more complex and equivocal, with shifting towards comparative studies (Alghazo et al., 2021; Barbara et al., 2024; Mu, 2024). Researchers are not that peremptory in interchangeability of identity, voice and stance, approaching the concepts comprehensively (Lee & Ye, 2023; Khamkhien, 2023; Barbara et al., etc.). The continuity and succession in many directions of study lie within the evolutive development of the field. Many researchers have been actively studying the field along those directions, with recurrent publications included in this review and beyond (Hyland, Matsuda, Ivanič, Tardy, Zhang, etc.). The review findings essentially are in line with the previously published reviews (Tardy & Matsuda, 2009; Mur-Duenas & Sinkuniene, 2016; Azar & Hashim, 2022).

Limitations

The limitations of this review were incorporated in some eligibility criteria. Publications in languages other than

English were excluded. Thus, there might be some bias in geographic representation of some regions and countries. Books, book chapters, editorials and some other types of publications excluded might have contributed to the scope of the review. Future reviews may focus on the publications dwelling upon authorial engagement with readers indexed in databases other than Scopus to give a more realistic picture. Reviews focused on some narrower aspects (self-representation, various types of voices, etc.) are likely to contribute to more comprehensible understanding of the topic.

CONCLUSION

The concepts related to authors in academic writing reflect their agency and persona and give an understanding of mechanisms deployed to construct their identity and voice and show their stance. The author-related concepts are still used interchangeably or partially as components in relation to each other. Complexity of concepts gives ways to more studies, combining various approaches in research. The directions of studies identified in the review proved the research continuity and development in the field. The implications of the review findings ought to re-focus potential contributors to the JLE on more studies on authorial presence in academic writing. On the whole, the synthesis of the research may further develop L2 instruction related to academic writing on the aspects of authorial stance, voice and identity.

DECLARATION OF COMPETING INTEREST

None declared.

AUTHORS' CONTRIBUTION

Elena Tikhonova: conceptualization, data curation, formal analysis, investigation, methodology, resources, software, validation, visualization, writing – original draft, writing – review & editing, other contribution.

Lilia Raitskaya: conceptualization, data curation, formal analysis, investigation, methodology, resources, software, validation, visualization, writing – original draft, writing – review & editing, other contribution.

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APPENDIX 1

Publications Included in the Review

- Ädel, A. (2022). Writer and reader visibility in humanities research articles: Variation across language, regional variety and discipline. *English for Specific Purposes*, 65, 49-62. <https://doi.org/10.1016/j.esp.2021.09.001>
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APPENDIX 2

The Key Features of Authorial Voice

Document	Other Researchers Cited in the Document	Essential Features Links to Other Concepts
de Magalhães et al., 2018		Voice therefore plays a powerful role in the reception of academic writing.
Dong et al, 2023	Bakhtin, 1981; Hyland, 2008	...academic voice is in constant change, as it embodies a dynamic author-reader relationship located “culturally and historically” ...voice is an open system influenced by disciplinary as well as socio-cultural factors... Voice is construed as “the ways we negotiate representations of ourselves and take on the discourses of our communities”
Lee & Ye, 2023		Underpinning authorial voice are two different dimensions – stance and engagement – each of which is supported by different linguistic devices
Le Ha, 2009	Blanton, 2003, p. 153	ESL/EFL writing brings to the fore issues of identity and voice, as it involves processes of negotiation, adaptation, appropriation and resistance that can occur during the acts of conceptualisation, drafting and writing ...Voice (actually a range of ways of voicing myself) must be felt within me; otherwise I have no way of shaping, even generating of something to say, on paper or elsewhere... ...sense of having a voice and identity in writing has given me a sense of wholeness, richness, connectedness and belonging...
Li & Deng, 2021		...voice plays a key role in the exploration of identity because voice can offer a means to give expression to identityvoice can also be both individual and social... Propositionally, the personal statement writers voiced their personal discipline-related experiences, motivations and aspirations. Structurally, the writers voiced across different timescales, thus achieving a sense of continuity and coherence in disciplinary identity construction. Holistically, the writers aimed to voice their self-images to construct the disciplinary identity of being a disciplinarily capable and personally unique candidate. Disciplinary identity voiced at different levels reveals the integration of both conformity to the target disciplinary community and distinctiveness from the application pool...
Matsuda & Tardy, 2007		...the development of voice as one strand of the complicated process of discourse acquisition...
Mhilli, 2023		This literature review revealed that the concepts of voice and identity are closely related... The individual view of voice closely ties voice in writing to the spoken human voice in a sense that everyone’s voice in both speech and writing is unique, distinct and identifiable...
Stock & Eik-Nes, 2016		One reason for different meanings of voice is that the meanings are based on different theoretical concepts and different research interests... ...an ethnographic approach ... Voice as writer roles... build on Halliday’s division of the main functions of language, and identify three types of positioning: ideational, interpersonal and textual.
Sun et al., 2022		Successful writers, thus, use sources and simultaneously provide their personal comments on the sources’ ideas, making the latter more prominent... in addition to effectively manipulating citations to create an authoritative voice, successful writers also use integral and non-integral citation forms strategically.

Document	Other Researchers Cited in the Document	Essential Features Links to Other Concepts
Tan et al., 2025		<p>Voice in written communication has been theorized from the individual, social, and dialogical perspective ... The first perspective views “voice” as an individual property analogous to the literal human voice... The second perspective—a social perspective—of voice emphasizes the discourse community within which the written text is composed... the third perspective—the dialogic perspective—of voice as co-constructed through the interaction between the reader and the writer...</p> <p>Voice in multimodal and AI-assisted writing... One of the most frequently mentioned benefits of having students create multimodal texts is to support students’ identity development in writing (Li & Akoto, 2021; Towndrow, 2023; Zhang et al., 2021)... While scholars generally agree that the use of multimodal features, such as images, videos, and sound effects, could contribute meaningfully to the construction of voice (Hafner, 2015; Matsuda, 2015), it is unclear how readers of multimodal texts draw on these features to construct the author’s voice... the dialogic nature of voice in multimodal writing ...</p>
Yasuda, 2022		...authorial voice could be explained by the following three key categories: voice at the linguistic level (attitude, graduation, engagement – Martin & White, 2005), voice at the whole-text level (selection of topic, selection of measurement items, targets of observation, selection of methods), and voice at the non-linguistic level (data visualization, mathematical formulas, symbolic representation)...
Zhao & Wu, 2022	Elbow, 1999 Stewart, 1972 Hyland, 2008 Tardy & Masuda, 2007	<p>The initial individualistic view of voice...the absolute agency of the writer ...</p> <p>...interactional model of voice foregrounds the interplay and interaction among the writer, the reader, and the text, as it incorporates both the stance and the engagement dimensions in its representation of the interaction between the author and the reader, as mediated by nine textual features...</p> <p>Factors influencing voice perceptions</p> <p>...the reviewers ...constructed an image of the author... by attending to different features (e.g., breadth of knowledge, (mis)use of terms, concision, syntax, close editing, and citation)... additional features that reviewers attended to (e.g., choice of topic, description of the research setting, the author’s representation of the field, signs of the author’s language background, and use of particular sentence structures)...</p>
Zhang, 2023		Citation, as an explicit marker of the social nature of the academic discourse, reflects writers’ positioning vis-à-vis the cited scholars and anticipated readers and plays a crucial role in the construction and acceptance of claims in a research community.

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A Mixed-Method Study on the Effectiveness of Using ChatGPT in Academic Writing and Students' Perceived Experiences

Eka Apriani ¹, Sholihatul Hamidah Daulay ², Fitria Aprilia ³, Abdul Gafur Marzuki ⁴,
Idi Warsah ¹, Dadan Supardan ¹, Muthmainnah ⁵

¹ Institut Agama Islam Negeri (IAIN) Curup, Indonesia

² Universitas Islam Negeri Sumatera Utara, Indonesia

³ Universitas Bina Darma, Indonesia

⁴ UIN Datokarama Palu, Indonesia

⁵ Universitas Al Asyariah Mandar, Indonesia

ABSTRACT

Introduction: The advent of artificial intelligence in education has brought forward tools like ChatGPT, which can potentially enhance students' academic writing abilities. However, there is limited empirical evidence examining its effectiveness and students' perceptions of its utility in academic contexts.

Purpose: This study aimed to measure the effect of using ChatGPT on students' academic writing abilities and to investigate students' perceived experiences regarding the use of ChatGPT in their writing process.

Method: An explanatory mixed-method design was employed, incorporating a quantitative experiment followed by a qualitative investigation. The quantitative phase involved 102 fifth-semester students from an English education department at a university in Indonesia. These students were randomized into clusters based on their proximate writing test scores, resulting in two homogenous classes of 25 students each. These classes were then assigned to either an experimental group, which received 14 sessions using ChatGPT as a learning tool for academic writing, or a control group, which received 14 sessions using non-generative tools. Pre-tests and post-tests were administered to both groups. The qualitative phase involved interviews with 10 selected students from the experimental group to explore their perceived experiences with ChatGPT.

Results: The pre-test scores indicated homogeneity between the experimental and control groups, with scores of 57.15 and 56.35 respectively. After the intervention, the post-test scores revealed significant improvement in the experimental group, with an average score of 81.11 compared to 60.30 in the control group. Statistical analysis demonstrated a significant disparity between the two groups ($p\text{-value} = 0.0000 < 0.05$ for the experimental group and $p\text{-value} = 0.067 > 0.05$ for the control group), suggesting that the use of ChatGPT significantly enhanced students' academic writing abilities. The qualitative findings supported these results, with students reporting that ChatGPT facilitated idea generation, organization, and construction in their writing process.

Conclusion: The study concludes that ChatGPT significantly improves students' academic writing abilities, as evidenced by both quantitative and qualitative data. The tool's capacity to assist in the formulation and organization of ideas presents substantial potential for its use in academic research and writing. Given these findings, ChatGPT could be a valuable addition to the educational toolkit for enhancing academic writing skills.

KEYWORD

academic writing, AI, chatgpt, writing performance

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Correspondence:

Eka Apriani,
eka.apriani@iaincurup.ac.id

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INTRODUCTION

The objective of academic writing is to effectively convey research results within a specific scientific discipline. Academic writing entails the anecdotal representation of research findings within a scientific field. Altunkaya & Ayranci (2020) elucidated that the aim of academic writing is to share or describe a result of research and convey information to individuals related to the research field. Writing in academic setting is a genre employed by those who demonstrate the capacity to offer perceptive observations within the boundaries of a certain area of academic inquiry, utilizing a range of concepts and theories. Before commencing the writing process, academic writers must establish a thesis. In addition, they need to possess a substantial level of expertise in the subject matter of their thesis, demonstrate familiarity with previous studies conducted in the field, and ensure that their writing is grounded in scientific principles.

The present study defines academic writing as the use of English to document scientific knowledge, communicate research methods, summarize research consequences, and present research results. Therefore, students of English as a foreign language (EFL) encounter difficulties in generating academic writing as a result of the substantial influence of their insufficient linguistic proficiency on their writing aptitude. One plausible determinant that may contribute to this phenomenon is the extensive implementation of examination-focused pedagogy and acquisition in the field of EFL.

Despite the myriad benefits that writing programs afford to college students, the attainment of writing proficiency has grown progressively challenging for them. This phenomenon has been documented in various contexts worldwide. Even among committed students, a plethora of writing deficiencies persists, spanning areas such as text organization, grammatical accuracy, mechanical precision, and lexical competence (Toba & Noor, 2019). In light of this issue, several educators are endeavouring to discover a novel approach to enhance students' proficiency in academic writing. In today's digital age, the majority of activities rely on various forms of technology. Therefore, educators must actively interact with technology throughout the process of teaching and learning. Technology may serve as a medium for educators to instruct students (Apriani et al., 2021). Subsequently, Apriani et al. (2022) asserted that technology is inherently suitable for all dimensions of education, encompassing curriculum design, pedagogical strategies, instructional methodologies, media integration, content dissemination, and assessment. Utilized as an educational instrument, technology is poised to stimulate and involve students, fostering their active participation in learning (Amalia et al., 2024). The integration of technology yields a twofold impact, augmenting students' scholastic achievements while concurrently moulding their personal attributes for future success. As technological advancements continue to unfold, educators experience a compelling obligation to leverage technology

as a conduit for enhancing students' competencies. This research endeavours to ascertain the efficacy of ChatGPT, integrated within a technological framework, in enhancing students' proficiency in academic writing.

ChatGPT, introduced in November 2022, has swiftly become a prominent figure in academic discourse, thanks to its multifaceted capabilities, ranging from extensive expositions to succinct anecdotes and even poetic expressions (Dergaa et al., 2023). Its success is evident in the staggering number of active users, exceeding 100 million by January 2023, thus solidifying its position as a favoured tool within the OpenAI community (Al Yakin et al., 2023). At the heart of ChatGPT lies the Generative Pertained Transformer (GPT) technology, which has revolutionized conventional learning and writing methodologies by its intricate design and complexity (Kirmani, 2023). Recent advancements by OpenAI, particularly with ChatGPT-3.5 and ChatGPT-4, have facilitated the integration of conversational chatbots for educational purposes, significantly enhancing convenience (Taecharungroj, 2023). The evolution of writing tools and programs has undergone a significant transformation, showcasing the latest ChatGPT iterations that demonstrate exceptional efficacy in generating textual contents. This is particularly notable in the context of lengthy essays and creative writing assignments, where ChatGPT exhibits remarkable performance (Rasul et al., 2023).

ChatGPT's capabilities extend beyond writing tasks to encompass a broad spectrum of functionalities, including responding to questions, coding, and facilitating group discussions on various topics (Lund & Wang, 2023). Leveraging its streamlined architecture and extensive data repositories, ChatGPT comprehends user queries and delivers relevant responses while maintaining contextual coherence. Its versatility as a writing tool is underscored by its ability to generate ideas, assist in editing, and proofread written content effectively (Sallam, 2023). Regarding usability and accessibility, ChatGPT presents a range of versatile features encompassing communication tools, writing aids, and search functionalities. These capabilities hold the promise of revolutionizing traditional pedagogical approaches and enriching personalized learning journeys (Firat, 2023). Despite its capabilities, ChatGPT is viewed as an aid rather than a replacement for human writing, emphasizing the irreplaceable role of genuine authors (Lund et al., 2023).

While certain scholars recognize ChatGPT as a valuable writing instrument and even incorporate it as a co-author in scholarly works, there are cautious voices within academia. They point out the infrequent acknowledgment of ChatGPT in academic literature, raising concerns about its scholarly acceptance (Kung et al., 2023; Manohar & Prasad, 2023; Stokel-Walker, 2022; Thorp, 2023). Nonetheless, the evolution of academic and scientific writing methodologies due to AI tools and technology is undeniable, yet it is crucial to recognize that complete displacement of human-authored text

by AI-generated content is unlikely, signifying ChatGPT's role as an assistant rather than a substitute for human writers.

In this situation, the researchers used ChatGPT 3.5 to find out if ChatGPT had an effect on students' academic writing abilities. The researchers conducted this research on fifth-semester students in the English department at a higher educational institution in Indonesia in the 2023–2024 academic year. In the current semester, students encountered many challenges in English academic writing. In the preceding context, the integration of AI or ChatGPT was non-existent in the pedagogical landscape, encompassing both students and educators. The researchers conducted preliminary research involving students enrolled in the English study program at IAIN Curup. Based on the findings, the students still have a lot of trouble organizing their thoughts in a way that allows them to generate high-quality writing while they make their academic writing from chapter one until the end. The students were honest about their situation and admitted that they were unable to investigate their ideas right away. Because of this reasoning, the researchers chose to carry out this research to discover whether ChatGPT is effective in boosting students' English academic writing abilities.

Prior research has been conducted on the utilization of ChatGPT for instructing essay writing. Burkhard (2022) conducted initial research, titled "Student perceptions of AI-powered writing tools: Towards individualized teaching strategies." The findings showed that students' opinions on AI-driven writing tools significantly differed. Certain students may utilize them in an unquestioning manner, leading to unintentional plagiarism. Furthermore, Shidiq (2023) conducted a study titled "The use of artificial intelligence-based Chat-GPT and its challenges for the world of education: From the viewpoint of the development of creative writing skills." The results indicate that the simplicity with which ChatGPT processes text input restricts the level of originality in its output, resulting in a tendency towards a lack of creativity. The utilization of the Chat-GPT system for the purpose of creative writing is notably seamless owing to its proficiency in comprehending natural human language. This domain encompasses the generation of literary compositions that exhibit a standard of excellence comparable to those created by humans, spanning across genres such as poetry, short fiction, novels, and various forms of written expression.

The aforesaid studies have contributed to providing insights regarding the use of ChatGPT in writing and in the other context of teaching and learning. However, thus far, limited research has been conducted on testing the effectiveness of ChatGPT especially in the context of academic writing. Hence, this study is sought to fulfil this void. This study is oriented towards two purposes: (1) to examine the effect of ChatGPT on students' academic writing abilities, and (2) to investigate students' perceived experiences after using ChatGPT in learning academic writing.

LITERATURE REVIEW

Definition of Academic Writing

Academic writing is referred to as a way or a skill for utilizing English to record scientific knowledge, explain how research is conducted, describe how it is completed, and detail its ramifications. A scientific field's research findings are objectively described in academic writing. Academic writing serves the purpose of disseminating the findings and insights derived from recent research endeavours to the scholarly community, with its primary readership comprising individuals engaged in the pertinent field of study (Altunkaya & Ayranci, 2020). It represents a specialized genre employed by scholars capable of engaging in discourse within the framework of a specific discipline, drawing upon diverse theoretical frameworks and perspectives. Prior to commencing the writing process, academic authors are required to formulate a clear and coherent thesis statement as a foundational element. They also need to have a good understanding of and an appreciation for prior research in the field of interest of their thesis, as well as a solid scientific foundation for their writing.

In academic writing, various models have been proposed to enhance our understanding of student writing and literacy. One such framework is presented by Yu and Liu (2021), who identify three distinct models: socialization, academic literacy, and study skills. The study skills model emphasizes mastery of the technical aspects of academic writing, focusing on surface-level elements such as grammar, syntax, punctuation, and orthography. This model assumes that proficiency in these areas is crucial for effective academic communication. In contrast, the academic socialization model, often referred to as the second paradigm, suggests that proficiency in academic writing is achieved through familiarity with the conventions of specific academic discourses. This approach underscores the importance of understanding and adhering to the norms and expectations of academic communities. Finally, Yu and Liu (2021) discuss the academic literacies model, which views student writing not merely as a technical skill but as a process of meaning-making and knowledge creation. This model is primarily concerned with the deeper understanding of concepts and the generation of new ideas within the academic context.

Artificial Intelligence in ELT

Machine intelligence, commonly referred to as «artificial intelligence,» encompasses a range of abilities that demonstrate the capacity of machines to perform tasks that typically require human intelligence. These abilities include voice recognition, planning, learning, and problem solving. According to McCarthy (2022), artificial intelligence represents the degree of intelligence exhibited by machines, enabling

them to mimic or replicate cognitive functions associated with human thought processes.

The integration of technology in language acquisition and pedagogy has garnered increased attention over the past three years, particularly with regard to advancements in artificial intelligence (AI) (La'biran et al., 2023; Taufik et al., 2021). There are still issues with AI in education, such as output bias, misuse, and human oversight. When handled properly, these issues can offer teachers new insights and chances to introduce students to the societal tendencies, concerns, and risks that come with AI applications. In an ethically sound way, Kasneci et al. (2023) use these models to clarify and offer answers for these problems.

In the near future, artificial intelligence (AI) possesses the capacity to profoundly reshape the landscape of education and revolutionize the operational paradigms of educational institutions. Gocen and Aydemir (2020) qualitatively investigate the viewpoints of participants from various organisations regarding the use of AI. Along with new advantages, the incorporation of AI within educational settings yields a spectrum of impacts, encompassing both advantageous and detrimental effects on educational institutions and educators alike. Positive impacts of AI in education include its ability to tailor content to individual learner's pace, efficiently determine learner needs, and save time and resources through automated processes (Apriani, Arsyad, et al., 2022; Utami et al., 2021). Additionally, AI can facilitate fast data analysis, leading to better decision-making and the ability to predict population movements for targeted investments. However, there are also negative impacts associated with AI in education. Over-reliance on AI may encourage a mechanical approach to learning, potentially overshadowing intuitive knowledge and humanistic values that are integral to education. Ethical concerns arise as well, including the potential for full student evaluation through AI systems, categorization based on IQ or other metrics, and a reduced need for human intervention in the educational process, which can impact the quality of education and the development of critical thinking skills. The results offer guidance on the utilization of AI and strategies for managing potential challenges. Despite the prevailing sentiment of enjoyment among the majority of participants, concerns were raised regarding the potential implications of AI for educators and other scholars in the forthcoming years (Maharrani et al., 2023).

AI within the framework of English as a Foreign Language (EFL) learning has yielded favourable outcomes in the domain of English language acquisition. Diverse AI applications, including Automated Evaluation Systems, Neural Machine Translation Tools, Smart Tutoring Systems, AI Chatbots, Intelligent Virtual Environments, and Affective Computing, have augmented the efficacy and efficiency of EFL learning processes. AI can help reinforce language compre-

hension, oral communication skills, listening, reading, and argumentative writing in English. Furthermore, integrating Affective Computing into Smart Tutoring Systems can aid in identifying and classifying learners' emotions, providing appropriate emotional support to motivate EFL learning (Jiang, 2022). Nevertheless, additional investigation is warranted to delve into the pedagogical capabilities of AI in mitigating diverse challenges encountered in EFL instruction. Furthermore, a comprehensive understanding of the ethical considerations and potential risks entailed in the integration of AI within the EFL milieu necessitates further scholarly inquiry.

The use of AI in EFL and writing contexts introduces a variety of challenges that educators and learners must navigate. In their study, Song and Song (2023) delineated several of these challenges. One challenge is related to user satisfaction levels, as not all users may be content with the feedback provided by AI systems, given variations in user preferences and expectations. Another challenge lies in the limitations of AI in offering comprehensive feedback, which may hinder deep understanding of mistakes. Moreover, there exists a potential hazard of technological dependency, wherein individuals may excessively lean on AI tools for self-assessment and enhancement, potentially diminishing their capacity for autonomous learning. Adapting AI to individual needs is also a challenge, considering the diverse learning styles and requirements of learners. Furthermore, AI may struggle with understanding cultural and linguistic nuances that affect writing, limiting its ability to provide truly relevant feedback. Encouraging creativity in writing is another hurdle, as AI's focus on technical aspects like grammar might overshadow the development of creative writing skills. Addressing these challenges necessitates a comprehensive strategy that amalgamates AI with conventional pedagogical approaches, aiming to optimize its advantages in augmenting writing proficiency and fostering motivation for learning within EFL environments.

Addressing the challenges associated with the use of AI in educational contexts requires a multifaceted approach. Hsiao and Chang (2023) explained that one crucial solution is the development of AI systems capable of providing more comprehensive and contextual feedback. Additionally, AI should be designed to adapt to individual needs, offering tailored feedback while avoiding the risk of fostering excessive dependence. Integrating AI with traditional teaching methods is also vital, as it can optimize the benefits of technology while preserving students' evaluative and creative writing skills. Furthermore, user training and education are essential to ensure that AI technology is utilized effectively and without over-reliance. Finally, enhancing AI's sensitivity to cultural and linguistic contexts within the EFL domain can significantly improve the relevance and meaningfulness of the feedback provided.

Academic Integrity and Ethics in the Context of Generative AI

The integration of generative AI tools, such as ChatGPT, into educational settings has opened up significant opportunities while simultaneously raising critical questions regarding academic integrity and ethics. These advanced AI systems can assist students in generating ideas, organizing content, and improving their writing. However, the ease and efficiency they provide also pose substantial challenges that must be addressed to maintain the integrity of academic work. Generative AI tools have the potential to enhance the learning experience by providing students with immediate feedback and suggestions for improvement. According to AlAfnan et al. (2023), ChatGPT can significantly improve students' writing skills by acting as a supplementary educational tool. However, this potential comes with a responsibility to ensure that the technology is used ethically. The authors highlight the need for clear guidelines and monitoring to prevent misuse and uphold academic standards.

One of the primary concerns associated with the use of AI in education is the issue of originality and authorship. Fyfe (2022) discusses how AI can facilitate the completion of assignments but also warns of the ethical dilemmas it creates. The ability of AI to generate text that appears original can lead to instances of plagiarism and reduce the incentive for students to develop their writing skills independently. This concern is echoed by Fuchs (2023), who points out that while AI tools like ChatGPT can support learning, they can also lead to over-reliance, thereby compromising the authenticity of students' work.

The global landscape of AI ethics guidelines provides a broad perspective on the ethical considerations of AI use. Jobin et al. (2019) examined various AI ethics guidelines worldwide and noted the importance of context-specific approaches. These guidelines emphasize the need for educational institutions to develop policies that address the unique challenges posed by AI in academic settings. The harmonization of these guidelines at a global level could help mitigate the ethical risks associated with AI. Moreover, the local context plays a crucial role in how AI ethics are applied and understood. Vetter et al. (2024) propose a framework for local interrogation of AI ethics, focusing on text generators like ChatGPT. Their study highlights the necessity of adapting ethical guidelines to fit local educational contexts to address specific ethical issues effectively. This localized approach ensures that the ethical implications of AI use are considered within the cultural and institutional frameworks of each educational setting.

While generative AI tools offer significant benefits for educational enhancement, their integration into academic environments must be managed with a keen awareness of ethical considerations. Institutions must develop and imple-

ment robust guidelines that ensure the responsible use of AI, promoting academic integrity and preventing misuse. By addressing both global and local ethical concerns, educational institutions can harness the potential of AI while safeguarding the principles of originality and ethical authorship in academic work.

ChatGPT 3.5

The ChatGPT 3.5 software employs generative language models to anticipate the subsequent words or phrases following a given sentence or written prompt. In essence, ChatGPT is an artificial intelligence program designed to emulate human-like conversations while functioning as a virtual robot. This prototype AI chatbot is designed to automatically reply to real human language via discussion. Due to its ability to provide resolutions for all problems, this platform is considered capable of assuming the function of Google. ChatGPT by Open AI is capable of delivering comprehensive answers to complex queries. Compared to other chatbots, ChatGPT has a significantly elevated degree of intelligence. ChatGPT exemplifies the Instruct GPT model crafted by OpenAI, engineered to promptly interpret and comply with directives while furnishing detailed and comprehensive responses (Joyce, 2023). Open AI's ChatGPT can assimilate feedback and adapt its behaviour by retaining information from past interactions. Chatbots have been the focus of many previous inquiries.

ChatGPT currently possesses the capability to assist researchers in many tasks, such as composing articles and abstracts, conducting literature research, condensing data or material, offering recommendations for structure, references, and titles, enhancing the readability of texts during language evaluations, and even generating complete drafts of papers (Hutson, 2022). It was also delivered by M. M. Rahman et al. (2023) that ChatGPT offers numerous benefits to researchers in terms of generating new ideas, defining research topics, and even composing abstracts using prompts. Furthermore, the researchers suggest that academic scholars could employ this method to condense extensive text and ascertain crucial discoveries from the literature. ChatGPT possesses the ability to produce textual content encompassing a vast array of subjects. ChatGPT recently composed a comprehensive letter to the editor in response to the author's inquiries (King, 2023). Artificial intelligence cannot generate novel ideas, but it is capable of arranging and refining the ideas provided by the researchers, resulting in an early version. Nevertheless, the current state of the generated text is merely a foundation for human-driven text creation, as it falls significantly short of replacing the expertise, ingenuity, and analytical skills of human specialists. Yan (2023) stated that ChatGPT is a useful writing tool that assists in developing creative content. Researchers have recognized its promise in language acquisition and facilitating the writing process.

Teaching Academic Writing by Using ChatGPT

The application of ChatGPT in academic writing instruction is becoming increasingly prevalent. Figure 1 illustrates how ChatGPT can be utilized as a tool to assist students in developing their academic writing skills, providing guidance on language use, structure, and idea generation.

To cope with their manifold academic responsibilities, scholars, researchers, and students have traditionally employed Large Language Models (LLMs) like ChatGPT. According to Gordijn and Have (2023), ChatGPT does not suffice the maturity as a competent researcher before it can create a thorough scientific paper. Nevertheless, it is expected that the functionalities and uses of ChatGPT will expand much more, including activities like creating experiments, writing and finishing papers, performing peer review, and making editorial choices (Van Dis et al., 2023). The ChatGPT system has the ability to engage in communication and interaction with textual content in several languages, hence facilitating the effective dissemination of information. Furthermore, it can aid individuals lacking proficiency in English to effectively generate and comprehend academic works (Liebrenz et al., 2023).

ChatGPT has demonstrated significant versatility in performing a wide range of functions, making it a valuable tool in various contexts. This AI system is capable of tasks such as textual composition, answering queries, coding, and providing both individual and collective guidance to enhance productivity. According to Lund and Wang (2023), these objectives are achieved through ChatGPT's efficient design and its access to extensive data repositories, which enable it to comprehend and process user input effectively. By analyzing the instructions given through user inquiries, ChatGPT is able to generate relevant and accurate responses. Moreover, it is designed to handle requests by either approving

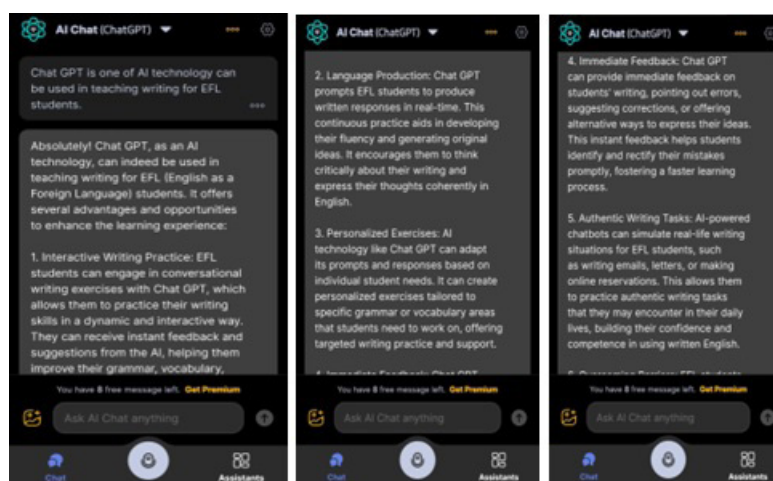
or declining them, answering questions, retaining the context of previous interactions, and adjusting in subsequent interactions as needed. This adaptability allows ChatGPT to provide consistent and contextually aware assistance across different tasks.

ChatGPT can be a very important tool for providing writing support and completing writing tasks in a variety of ways, according to academic and scientific talks conducted worldwide (Sallam, 2023). According to research that has been done on the topic, ChatGPT serves as a comprehensive solution for writing activities, from idea generation through final editing and proofreading. The development of ChatGPT has significantly enhanced the efficiency of the writing process. This tool has the capability to expedite content creation, requiring less time and effort from students and teachers alike. With ChatGPT's ability to provide well-structured and logical material on any given topic, individuals can redirect their focus towards other aspects of their work, leading to increased productivity and time-saving benefits (Lund et al., 2023; Yan, 2023). Furthermore, ChatGPT plays a pivotal role in idea generation for writing projects. Researchers such as (Kasneci et al., 2023; Taecharunroj, 2023) have highlighted its potential in assisting students to come up with innovative ideas. By suggesting subjects, concepts, and perspectives that may not have been previously considered, ChatGPT stimulates creativity and supports students in expanding their writing horizons.

In addition to idea generation, ChatGPT offers valuable assistance in text translation across languages. This feature is particularly advantageous for students writing papers in languages other than their native tongue. By ensuring accurate and complete translations, ChatGPT enables students to maintain the integrity and precision of their work, contributing to higher quality outputs (Lund & Wang, 2023). Moreover, the reliability and accuracy of content produced

Figure 1

The Use of ChatGPT for Academic Writing



with ChatGPT are notable. Its extensive informational resources enhance the likelihood of generating reliable content. This is further facilitated by ChatGPT's ability to identify and rectify errors, making the process of content creation more streamlined and efficient.

Additionally, ChatGPT fosters improved collaboration among students and teachers. Its AI-generated content facilitates effective team collaboration by allowing multiple individuals to work on a project simultaneously. Furthermore, ChatGPT's editing and proofreading capabilities, including grammatical, syntax, and spelling fixes, contribute to enhanced writing quality and reduced errors. As a result, students can write more effectively and confidently, supported by ChatGPT's collaborative features and error-correction abilities.

ChatGPT Challenges for Higher Education

While ChatGPT has many advantages to its users, it is crucial to recognize that it also has several disadvantages that require thoughtful attention throughout its use. The primary obstacle is in the matter of measuring accuracy. The system's precision is contingent upon the volume, intricacy, and calibre of the training datasets, alongside the quality of input data provided by students. Such system tends to disengage higher education learners in in-depth thinking activities. In the meantime, Fuchs (2022) explained the significance of advancing proficiency within higher education and emphasized the paramount importance of nurturing students' advanced cognitive abilities, such as problem-solving and critical thinking. Because human language is so complex, the system of ChatGPT can find it difficult to understand, which could lead to misunderstandings and incorrect responses.

Incorporating ChatGPT within higher education settings presents a notable challenge for students, as it may foster excessive reliance on technology, potentially hindering the cultivation of essential critical thinking skills (Michel-Villarreal et al., 2023). Although critical thinking is commonly acknowledged as a desirable skill, there are several additional advanced cognitive capacities that might be investigated in the context of using ChatGPT. An excessive dependence on technological tools like Google Bard and ChatGPT may result in students adopting a passive learning approach, wherein they unquestioningly accept the system's generated responses without engaging in critical evaluation or inquiry into the information's accuracy or relevance (Dempere et al., 2023). Important critical thinking abilities, such as assessing the credibility and dependability of sources, forming well-informed opinions, and generating innovative concepts, may be neglected as a result.

Moreover, an overreliance on it might promote entrenched prejudices and perpetuate inequalities in the realm of education. This occurrence would constitute a failure to con-

front and dismantle prejudiced practices within the realm of higher education. The potential consequences of training the system with incomplete or insufficient data include the generation of responses that reinforce these biases, so reinforcing pre-existing inequities (Dempere et al., 2023). To mitigate these challenges, it is imperative for educational institutions to furnish students with clear guidelines on the appropriate integration of ChatGPT as an educational tool, emphasizing its supplementary role rather than as a replacement for critical thinking and self-directed learning (Inderawati et al., 2024; Van Slyke et al., 2023). Academic institutions must prioritize providing ample opportunities for active learning to nurture the cultivation of critical thinking, problem-solving, and independent inquiry skills among students.

In a recent investigation carried out by Wilkenfeld et al. (2022), it has been found that chatbots possess distinct linguistic constraints. Coniam's (2014) study demonstrates that chatbots generally generate responses that adhere to grammatical norms. Nevertheless, ChatGPT now has a deficiency in terms of practical applicability and linguistic diversity (Chaves & Gerosa, 2022). However, Wilkenfeld et al. (2022) proposed that chatbots have the potential to progressively conform to the speech patterns of humans in certain circumstances. Considering the strides made in natural language processing and the evolution of artificial intelligence frameworks such as ChatGPT (Molnár & Szűts, 2018), it is a justifiable anticipation that the linguistic precision of ChatGPT will enhance progressively, enabling it to more closely emulate the expressive writing techniques employed by human beings (Park et al., 2021).

METHOD

Research Design

The researchers in this study employed a mixed-method design, namely explanatory sequential research, to effectively handle data in both quantitative and qualitative formats. A study by Creswell and Clark (2017) indicated that employing mixed methods in the educational technology domain enables researchers to comprehensively analyse the impact of a new tool, namely, ChatGPT in the present study's context, from both instructional and student perspectives. The researchers sought to 1) find out the effect of using ChatGPT 3.5 on students' academic writing abilities and 2) investigate their perceived experiences after using ChatGPT in learning academic writing. The effect of using ChatGPT was examined quantitatively by using an experimental study. The investigation of students' perceived experiences of using ChatGPT was undertaken qualitatively. This qualitative part is crucial to generate vicarious experiences valuable for readers or other researchers who had interests in AI research.

Participants

The study's participants comprised 102 fifth-semester students enrolled in an English academic writing course within the English department of a tertiary education institution in Indonesia. They were the students from 4 classes. For the purpose of experimentation, this study employed a cluster random sampling technique to elicit two homogenous classes of students to be the participants or samples. The randomization process was based on the students' homogeneity profiles regarding their ages, educational backgrounds, workload, and proficiency in academic writing. Across the four classes, there was a noticeable homogeneity observed in terms of age distribution, educational attainment, and academic workload. However, in terms of the profile of academic writing abilities, the researchers navigated students' previous scores of academic writing exams. As a result, the researchers could find two classes of students whose means of previous academic writing exams were the most slightly proximate to one another. They were the students of Classes B and C. Each class had 25 students. With their homogenous profiles, the students of the two classes were stated to be the experimental class and the control class.

Treatments

In this research, 14 treatments were administered to the experimental and control groups to explore the efficacy of using ChatGPT versus traditional manual strategies in the academic writing process. The experimental group utilized ChatGPT for idea generation, while the control group employed manual writing strategies. Each session was carefully structured to align with the elements of a condensed undergraduate thesis, akin to a journal article, encompassing the research introduction, literature review, methodology, results, discussion, conclusion, abstract, and references. Additional digital research tools such as Google Scholar, Mendeley, and Zotero were also provided to both groups to support and enhance their research processes beyond the initial phase of idea generation.

In the experimental group, the first session introduced students to the capabilities of ChatGPT, emphasizing its potential to generate creative ideas and aid in the various stages of academic writing. Following sessions leveraged this AI tool for brainstorming topics, developing research questions, formulating hypotheses, and constructing the structural backbone of the thesis. A notable innovation was the use of ChatGPT to simulate data collection scenarios and assist in analysing data, which provided unique insights that might not surface through traditional methods (See Tabel 1). It is worth noting that ChatGPT 3.5 was the version used in this study. This detail is crucial for understanding the capabilities and limitations of the AI tool employed during the experiment. ChatGPT 3.5 offers advanced natural language processing capabilities that can assist students in generat-

ing ideas, organizing their thoughts, and improving their writing. However, it is also important to recognize that different versions of ChatGPT may have varying levels of effectiveness and potential issues. By specifying the version used, the study provides clarity on the technological context and allows future researchers to compare results across different versions of ChatGPT. This information can also help educators and policymakers understand the specific features and limitations of the tool used in the study, facilitating more informed decisions about its integration into educational practices.

Contrastingly, the control group relied on traditional academic writing techniques. This approach began with a session on manual brainstorming methods and progressed through individual research question development and hypothesis generation based on existing data or theories. These sessions aimed to deepen students' understanding of manual research processes from literature searching to method design and data analysis. The focus was on nurturing a collaborative and reflective atmosphere through group discussions, peer reviews, and mentor-led sessions (See table 1).

As the course neared completion, both groups dedicated several sessions to discussing their findings, drafting conclusions, and preparing the research abstract. The ultimate session was crucial, focusing on revising the entire thesis. This involved integrating feedback from peers and instructors for the control group, and feedback from ChatGPT for the experimental group, ensuring that all thesis components were cohesively integrated and met the rigorous academic standards expected in scholarly work.

The researchers collaboratively played a role as the lecturers for both experimental and control classes in giving the research treatments. It is important to emphasize that before the treatments of each class had been provided, the students of both classes were given academic writing pre-tests. They received academic writing post-tests after the 14 treatments had been done.

Writing Instrument Test

This research employed a dual assessment approach to gauge the students' advancement. Specifically, the researchers administered pretests before giving treatments to both experimental and control groups and post-tests after treatments ended. Two experts of English academic writing from two universities were recruited in this study to validate the writing prompts. The outcome of the content validity assessment can serve as a tool in this study. It is important to highlight that because the test was categorized as a performance test, the researchers only relied on the content validity, and there was no construct validity and statistical

Table 1
Treatments of the Study

Ses- sion	Experimental: ChatGPT for Idea Generation	Control: Manual Writ- ing Strategies	Other Tools	Duration (Hours)	Instructor Role (Experimental/ Control)	Student Role (Experimental/ Control)
1	Introduction to ChatGPT and initial set-up for idea generation.	Introduction workshop on traditional brainstorming strategies.	Google Scholar, Mendeley, Zotero, and others	2	Facilitator/Mod- erator	Active partici- pation/Group discussion
2	Using ChatGPT for brainstorming research topics.	Group brainstorming session to determine research topics.	Google Scholar, Mendeley, Zotero, and others	2	Guide/Group dis- cussion	Developing ideas/ Exploring topics
3	Developing research questions with ChatGPT.	Individual writing of research questions.	Google Scholar, Mendeley, Zotero, and others	2	Mentor/Advisor	Formulating ques- tions/Independent work
4	Identifying and formu- lating hypotheses with ChatGPT's help.	Creating hypotheses based on existing data or theories.	Google Scholar, Mendeley, Zotero, and others	2	Facilitator/Guide	Hypothesis formation/Theory analysis
5	Writing the introduc- tion with ideas from ChatGPT.	Manually writing the thesis introduction.	Google Scholar, Mendeley, Zotero, and others	2	Director/Director	Writing/Outline and drafting
6	Using ChatGPT to find relevant literature sources.	Manual literature search and reference organiza- tion.	Google Scholar, Mendeley, Zotero, and others	2	Information source/Advisor	Searching/Organ- izing references
7	Writing the literature review with structures generated by ChatGPT.	Writing the literature review using manual note-taking and outlining methods.	Google Scholar, Mendeley, Zotero, and others	2	Director/Group discussion	Writing/Drafting and editing
8	Using ChatGPT to design research methods.	Designing research methods through group discussions and note-taking.	Google Scholar, Mendeley, Zotero, and others	2	Facilitator/Group discussion	Method design/ Method design
9	Data collection simu- lation using scenarios created by ChatGPT.	Role-based data collec- tion simulation: Students take on various roles in a scenario designed to understand the processes and challenges of data collection.	Google Scholar, Mendeley, Zotero, and others	2	Coordinator/Guide	Simulation/Simu- lation
10	Data analysis with ChatGPT's help to discover insights.	Data analysis using manual statistical techniques or software without ChatGPT's help.	Google Scholar, Mendeley, Zotero, and others	2	Advisor/Instructor	Analysis/Analysis
11	Discussing research findings using ChatGPT to gain new perspec- tives.	Discussing results with mentors or peers to interpret data.	Google Scholar, Mendeley, Zotero, and others	2	Moderator/Group discussion	Discussion/Discus- sion
12	Writing conclusions based on discussions with ChatGPT.	Writing conclusions based on results and discussions.	Google Scholar, Mendeley, Zotero, and others	2	Director/Advisor	Drafting conclu- sions/Drafting conclusions
13	Using ChatGPT to draft the research abstract.	Drafting the abstract based on the taught structure.	Google Scholar, Mendeley, Zotero, and others	2	Advisor/Group discussion	Writing abstract/ Writing abstract
14	Comprehensive thesis revision with feedback from ChatGPT.	Thorough thesis revision with peer-review within the class.	Google Scholar, Mendeley, Zotero, and others	2	Reviewer/Reviewer	Revision/Peer review

reliability testing as commonly done on item-based tests. In addition, the scoring of this performance test was relied on the academic writing rubric prepared by the researchers.

The pre-test and post-test were conducted over seven consecutive days for students in both the experimental and control groups, aimed at evaluating their academic writing skills. These tests were meticulously designed to assess each component of a shortened undergraduate thesis, which follows the format of a journal article. This comprehensive assessment included various segments such as the research introduction, literature review, methodology, results, discussion, conclusion, abstract, and references.

On the first day, students focused on the research introduction. They were tasked with defining the main problem, formulating research questions, and specifying the objectives of their study, producing a concise narrative between 300 and 500 words. The second day involved crafting a literature review that supported their research thesis, incorporating critical sources related to their topic, with an expected length of 500 to 700 words. The third day shifted towards the methodology section, where students detailed the procedures for data collection and analysis, including the design, population, and sampling techniques, within a 400 to 600-word limit. On the fourth day, the students presented their research findings. Since actual data collection was not

feasible within the test settings, simulated data was used. They were required to present this data clearly and systematically, keeping their submissions within a 300 to 500-word limit. The fifth day was dedicated to discussing the implications of their findings, analysing how the results addressed the research questions and how they related to the existing literature, within 300 to 500 words. The sixth day involved writing the conclusion, where students summarized the research outcomes and proposed suggestions for future research or practical applications, aiming for 200 to 400 words. Finally, on the seventh day, students crafted an effective abstract that summarized all essential elements of their research and compiled a reference list according to a specified journal format, with a word count between 150 and 250 words (See Tabel 2).

Each testing session was conducted over a two-hour period, during which students used laptops to ensure uniformity in accessing and utilizing word processing features. This setup not only facilitated a consistent and efficient evaluation process but also allowed the instructor to monitor and supervise effectively, ensuring adherence to the academic standards. The use of laptops played a crucial role in maintaining the integrity of the testing environment, helping to ensure that all students had an equal opportunity to demonstrate their capabilities under standardized conditions. The identical structure of the pre-test and post-test allowed for a clear

Table 2
Prompts and Procedure of Pre- and Post-Tests

Day	Thesis Components	Test Prompts	Ideal Word Count	Duration	Tool	Lecturer Roles
1	Research Introduction	«Write a research introduction that identifies the main problem, research questions, and the objectives of your study.»	300-500 words	2 hours	Laptop	Facilitate, Supervise
2	Literature Review	«Develop a literature review that supports your research argument, including critical sources related to the research topic.»	500-700 words	2 hours	Laptop	Facilitate, Supervise
3	Research Method	«Describe the methodology you used to collect and analyse data, including the research design, population, and sampling techniques.»	400-600 words	2 hours	Laptop	Facilitate, Supervise
4	Research Findings or Results	«Present your research findings clearly and systematically, using simulated data given that actual data cannot be collected during this test session.»	300-500 words	2 hours	Laptop	Facilitate, Supervise
5	Research Discussion	«Discuss the implications of your findings, how they answer the research questions, and their relation to the existing literature.»	300-500 words	2 hours	Laptop	Facilitate, Supervise
6	Conclusion	«Write a conclusion summarizing the research results and suggestions for future research or related practices.»	200-400 words	2 hours	Laptop	Facilitate, Supervise
7	Abstract and References	«Create an effective abstract that covers all essential elements of your research and a list of references in the chosen journal format.»	150-250 words	2 hours	Laptop	Facilitate, Supervise

comparison of students' progress and the effectiveness of the instructional methods employed during the course.

From these experts, the researchers obtained data regarding the students' academic writing scores.

When analysing the written assignments, an academic writing rubric was deployed. Two academic writing experts from two universities were recruited as the raters to evaluate students' written works using the prepared writing rubric.

Interview Guidelines

A pair of experts who were experienced English lecturers from two universities in Indonesia conducted an evalua-

Table 3

Rubric of Writing Tests

Classification	Score	Criteria
Content	25-21	SUPERB TO EXCELLENT: knowledgeable, substantial, through growth of thesis, and applicable to given topic
	20-16	AVERAGE: Some understanding of the subject; a good range; some growth of the theory; mostly related to the topic but lacking information.
	15-11	MINOR TO POOR: not enough information about the subject; not enough content; not enough growth of the topic
	10-0	HIGHLY POOR: doesn't show knowledge of subject; not substantiated; not relevant; or not enough to rate
Organization	25-21	GREAT TO VERY GOOD: Fluent language, ideas stated and supported clearly; well-organized; logical order; cohesive
	20-16	GOOD TO AVERAGE: occasionally rough; not well put together, but key ideas stand out; not much support; logical but missing order of events
	15-11	FAIR TO POOR: not flowing well; ideas are jumbled or scattered; growth and ordering don't make sense;
	10-0	VERY BAD: does not speak to people, is not organised, or doesn't review enough
Grammar	25-21	GOOD TO EXCELLENT: complex designs that work well, A few problems with agreement, subject, number, word order/function, article, adjective, phrase, and word order/function
	20-16	GOOD AS A GROUP: simple but powerful builds, small problems in complicated buildings, several agreements, including tense, number, word order/function, article, pronoun, preposition, and prepositions; meaning is rarely lost
	15-11	FAIR TO POOR: big issues with easy or complicated builds, A lot of mistakes with number, negation, sentence, article, pronoun, prepositions, fragments, run-ons, delete, and word order/function, having a vague or unclear meaning
	10-0	VERY BAD: almost no understanding of how sentences are put together
Vocabulary	15-13	GREAT TO VERY GOOD: an advanced range, choosing and using the right words and idioms, mastering words, using the right range
	12-10	GOOD TO AVERAGE: a good range, sometimes mistakes with the form, choice, or usage of effective words or idioms, but the message is still clear
	9-7	FAIR TO POOR: A small area, A lot of mistakes with the form, choice, and use of effective words and idioms, Meanings that are unclear or mixed up
	6-0	VERY POOR: a translation, not enough or not enough understanding of English words, phrases, and word forms to rate
Writing Mechanics	10	VERY GOOD TO EXCELLENT: show that you know how to follow the rules, only a few spellings, grammar, punctuation, capitalization, and paragraphing mistakes.
	9-8	ABOUT AVERAGE: some writing, grammar, capitalization, and paragraphing mistakes, but the message is still clear.
	7-6	FAIR TO POOR: spelling, grammar, capitalization, and paragraphing mistakes often; bad handwriting; unclear or confusing meaning
	5-0	VERY BAD: doesn't follow rules and has lots of writing, grammar, punctuation, capitalization, and paragraphing mistakes. If the handwriting is valid or not enough to judge

Note. Adopted from Jacobs et al. (1981)

tion of the interview protocol. The researchers employed a qualitative methodology by conducting comprehensive interviews with the participants of 10 students selected from those who had received experimental treatments of learning academic writing using ChatGPT. The interview protocol was constructed by adopting the theoretical indicators of undergraduate thesis domains. The domains comprised research introduction, literature review, research method, findings, discussion, and conclusion (Luo, 2023). These domains were uttered into some questions. Some other questions regarding general perceived experiences of using ChatGPT were also provided in the interview protocol.

Data Collection and Analysis

The goal of this study is to examine how ChatGPT affects students’ academic writing abilities and their experiences utilizing ChatGPT while writing at the same time. Two distinct categories of data were collected, namely, quantitative and qualitative. The quantitative data were obtained through the administration of a test comprising pre- and post-tests on academic writing. During these tests, students composed their final papers or theses encompassing chapters one through five. Participants were divided into two groups: the experimental group, which received 14 treatments involving the utilization of ChatGPT during the thesis writing process, and the control group, which underwent 14 sessions without the aid of ChatGPT, but with the aid of other non-generative AI tools. Treatments were conducted during academic writing sessions, focusing on various aspects such as crafting introductions, developing theoretical frameworks, outlining methodologies, presenting results and discussions, formulating conclusions, and compiling references. The researchers guided students in utilizing ChatGPT effectively, emphasizing originality, ethical quot-

ing, integrating GPT-generated content, and infusing personal emotions and sentiments into their writing.

Subsequently, the pre- and post-tests were evaluated by expert assessors in English academic writing from two universities. These evaluators employed the writing rubric developed by Jacobs et al. (1981) for assessment. Furthermore, an independent sample t-test was employed to investigate the variance in writing proficiency across the two groups, with data analysis being carried out via SPSS. In parallel, qualitative data were gathered employing qualitative descriptive methods to explore students’ experiences with ChatGPT during thesis writing. In-depth interviews were conducted to collect qualitative data, with the following procedures employed for qualitative data analysis: data collection, reduction, identification, clarification, and verification.

RESULTS

The research outcomes have been addressed in two distinct sections. The initial section primarily focuses on the results obtained from the quantitative data. In the subsequent part, the findings derived from the qualitative data are presented.

The Effect of Using ChatGPT on Students’ Academic Writing Abilities

In this research, the subjects were divided into two separate groups. One group adhered to teaching and learning academic writing using non-generative AI tools for thesis production, while the other group utilized ChatGPT as a means of help. The researchers presented ChatGPT to the experimental group. Monitoring was conducted to ensure that the control group did not utilize the ChatGPT. According to the

Table 4
Interview Guideline for Students’ Perceived Experiences in Using ChatGPT to Boost Academic Writing Abilities

No	Questions	Answer
1	How did ChatGPT help you build an introduction for academic writing?	
2	How did ChatGPT help you build a theoretical framework for academic writing?	
3	How did ChatGPT help you build previous studies for academic writing?	
4	How did ChatGPT help you build the results of the thesis?	
5	How did ChatGPT help you build the discussion of the thesis?	
6	How did ChatGPT help you construct the conclusion of the thesis?	
7	What did you perceive of using ChatGPT in writing thesis?	
8	What did you experience while using ChatGPT in finding the ideas of your thesis?	
9	What do you think about the existence of ChatGPT to help students’ academic writing?	
10	What do you feel about the existence of ChatGPT to help students learn academic writing?	

result of the writing tests, the researchers found the results as shown in the table below:

The presented data demonstrates a notable influence of employing ChatGPT in enhancing students' proficiency in academic writing. The data was obtained through the implementation of a test in two distinct groups, specifically referred to as the experimental and control groups. The experimental group employed ChatGPT as a tool to assist the students in formulating a conceptual framework for their thesis. In contrast, the control group refrained from utilizing ChatGPT for the construction of the thesis. Consequently, the experimental groups achieved a score of 81.11, whereas the control group obtained a score of 60.30. This suggests that the experimental group obtained higher scores, underscoring the efficacy of ChatGPT in assisting students with their academic writing tasks. The data presented in the table reveal a statistically significant disparity in test scores between the experimental and control groups (Significance Values = $0.000 < 0.05$). Additionally, the control group did not achieve statistical significance ($0.067 > 0.05$). Further analysis indicates that the experimental group outperformed the control group in terms of achievement. Consequently, ChatGPT seems to be beneficial for instructing undergraduate students in academic writing.

Students' Perceived Experiences on the Use of ChatGPT in English Academic Writing

The researchers probed into students' perceived experiences of using ChatGPT in academic writing based on the conducted interview. Referring to their perceived experiences, the students expressed differing levels of satisfaction with regard to the use of ChatGPT across each domain of writing undergraduate theses. The students also expressed their intention to enhance their academic writing skills and engage in collaborative efforts to use a mixture of ChatGPT and their ideas.

The summary of qualitative data demonstrated that ChatGPT enhanced information retrieval and idea generation in writing research introduction, assisting in locating relevant content inside the theoretical framework, enhancing all parts of writing and fostering creativity, facilitating the organisation of the research findings, helping with syntheses of concepts and theories facilitating students' abilities

to reach conclusions effortlessly, helping to find the ease of constructing academic writing concepts, and paving the way to understand all thesis structures. However, it was also considered that ChatGPT should not be exaggeratedly relied on due to its robotic nature, and it was also necessary to control over ChatGPT generative results by rereading and humanistic editing.

In appropriate detail, the following are several interview transcripts representatively selected to demonstrate the participants' perceived experiences of using ChatGPT:

Excerpt 1

"GPT is a pleasurable tool that allows us to efficiently look for all the needed information when writing an introduction. Using ChatGPT to generate ideas for writing the Introduction of a thesis simplifies the process for me." (Student 1)

Excerpt 2

"When utilising GPT for academic writing instruction, it assists us with locating relevant content inside the theoretical framework of writing. ChatGPT assists in locating the precise theoretical framework that is required. The outcome is contingent upon the command we enter." (Student 4)

Excerpt 3

"I believe that utilising ChatGPT for academic writing can enhance my writing proficiency. It enhances all parts of writing and fosters creativity by allowing us to cooperate with the ChatGPT's results and our own thoughts. ChatGPT is quite beneficial as it assists me with organising the outcomes of my academic writing." (Student 5)

Students 1, 4, and 5 in the above transcripts collectively illustrated the transformative impact of ChatGPT on academic writing processes according to students' perceived experiences. Student 1 emphasized the efficiency and simplification ChatGPT brought to information gathering for a thesis introduction, while Student 4 underscored its role in navigating the theoretical framework with precision. Student 5 extended this perspective by highlighting ChatGPT's potential to enhance writing proficiency across various facets and its facilitation of creative collaboration between generated content and personal insights. Together, their perspectives reflected a consensus on ChatGPT's substantial benefits in streamlining research, enhancing writing quality, and fostering a symbiotic relationship between human creativity and AI-generated resources in academic endeavours. Other perceived experiences of students could be viewed in the following selected transcripts:

Table 5

Achievement scores for the Experimental and Control Group

Group	N	Mean Score Pre-Test	Mean Score Post-Test	Std. Deviation	Sig.
Experimental	25	57.15	81.11	22.988	0.000
Control	25	56.35	60.30	20.185	0.067

Excerpt 4

"ChatGPT facilitates the organisation of the research findings. Regrettably, ChatGPT is unable to perform numerical data counting." (Student 6)

Excerpt 5

"The ChatGPT feature is really beneficial as it allows us to contribute our inquiries in a designated column located at the bottom of the main page. The integration of ChatGPT technology necessitates the synthesis of our concepts and theories to bolster the research discussion." (Student 8)

Excerpt 6

"ChatGPT facilitates my ability to reach conclusions effortlessly. We just executed the command, for instance, to deduce the outcome that we have obtained during the studies." (Student 2)

The above transcripts demonstrated that student 6 acknowledged that ChatGPT facilitated the organization of research findings, although expressed regret regarding its inability to handle numerical data counting. Student 8 extolled the benefits of ChatGPT's feature that permitted user input in a designated column, emphasizing the integration of ChatGPT technology to synthesize concepts and theories for strengthening research discussions. Student 2 highlighted ChatGPT's assistance in reaching conclusions with ease, exemplified by the execution of commands to deduce study outcomes, showcasing the tool's utility in research analysis and interpretation. More on the students' perceived experiences of using ChatGPT can be seen from the following transcripts:

Excerpt 7

"The ChatGPT function facilitates the construction of my own academic writing concept with ease. Whenever I require to construct a concept regarding a specific subject, it spontaneously emerged. Even if this application is paid, I will definitely rethink its use or use other alternative AI to help write because ChatGPT just as additional tool, the writer is definitely the main tool." (Student 7)

Excerpt 8

"GPT facilitates the completion of our thesis due to its ease of construction and retrieval of necessary information. However, it is important to avoid excessive dependence on ChatGPT, as it still requires human judgement to ensure the coherence of the written output." (Student 9)

Excerpt 9

"Another advantage of GPT is its ability to organise paragraphs in a direct manner, allowing us to understand the structure of the thesis, from the general notion to the specific thought. Nevertheless, the central concept still originates from us." (Student 10)

Excerpt 10

"GPT exhibits similarities to human invention since it utilises both active and passive voice. Moreover, it possesses knowledge regarding the various tenses that can be employed. Nevertheless, it is not feasible to directly replicate every comment from ChatGPT; instead, it is necessary to re-read the text in order to enhance its naturalness." (Student 3)

As shown in the above transcripts, Students 7, 9, 10, and 3 collectively reflected on the functionalities and limitations of ChatGPT and GPT in academic writing contexts. Student 7

praised ChatGPT for its ease in constructing academic writing concepts and expressed a willingness to reconsider its use despite potential costs, recognizing it as an additional tool alongside human agency. Student 9 acknowledged GPT's role in expediting thesis completion through simplified construction and information retrieval, cautioning against excessive reliance on it and emphasizing the necessity of human judgment. Student 10 highlighted GPT's ability to organize paragraphs effectively in thesis structures while emphasizing human input in generating core concepts. Finally, Student 3 noted similarities between GPT and human language use but advised against blindly adopting its suggestions, advocating for a review process to ensure natural text flow.

DISCUSSION

The Effect of Using ChatGPT on Students' Academic Writing Abilities

The findings of the present research demonstrated a considerable improvement in students' acquisition of academic writing skills via the use of ChatGPT 3.5 as a tool for instructional support. The data were divided into two different classes, namely the control class and the experimental class. The students' achievement levels improved while they were in the control group. The researchers discovered that the score in the control group on the pre-test was 56.35, but on the post-test, it was 60.30. This information was gleaned from the data collection. When they were working on their academic writing, the students in the control class were not permitted to utilize any kind of AI or ChatGPT. Nevertheless, throughout the writing activity, participants were permitted to utilize other methods by utilizing ICT, but not ChatGPT. These methods included using Google Scholar, Eric, and other sources to support their thesis or academic writing. ChatGPT was not authorized. The students' scores did improve as a result of using that methodology, but the gains were not statistically significant. In addition, students acknowledge that while they acquire writing abilities over their learning process, they face challenges in thesis preparation, including delays in completing their writing, novelty of the ideas, and difficulties with grammar.

The experimental group demonstrated significant improvement relative to the control group under varying conditions. Initially, the pre-test average score for students stood at 65.15, which subsequently rose to 81.11 in the post-test. Statistical evaluations indicate that the performance of the experimental group surpassed that of the control group, implying that ChatGPT is an exceptionally effective resource for supporting students in their academic writing endeavours. In addition, it was discovered that the variances were consistent before the inquiry ($p = 0.067 > 0.05$), which was a positive finding. According to the findings of the study, there

was a notable disparity in the levels of test achievement ($F = 0.058$; $p 0.000 < 0,05$ for each comparison). Hence, the use of ChatGPT in academic writing made it easier for students to build the idea. When the ChatGPT was first shown to the students, they responded with a great deal of interest and curiosity, indicating a significant desire to make use of the ChatGPT. Based on student interviews, it was revealed that while students rely on ChatGPT for assistance, they do not rely solely on it. Instead, they carefully review and confirm the data that ChatGPT provides to make sure it is pertinent and in line with their preferences. According to AlMarwani (2020) research, there are three models of student writing in academic settings: socialization, academic literacy, and study skills. After conducting the test, the researchers found that almost all three settings achieved a very high score. As stated by AlMarwani (2020), the socialization model holds the assumption that being proficient in the fundamental guidelines of a certain academic discourse is necessary for becoming a great academic writer. The researchers learned from the interview that it was easier to organize academic writing while using ChatGPT. Besides, the students also have good literacy while using ChatGPT because ChatGPT can make a review of an article, so the students found that simpler. For the last aspect, the researchers found that the organization, grammar, word choice, and spelling were improved by using ChatGPT. According to Tuzlukova et al. (2016) and Apriani et al. (2021), the utilization of online learning environments has been found to result in improvements in students' writing abilities, productivity, and proficiency in computer usage. Al Yakin et al. (2023) explained that ChatGPT holds promise as a beneficial tool for academic authors, since it has the capacity to enhance writing techniques and outcomes. They also posited ChatGPT employed as individualized learning supports have a beneficial effect on successful learning and student satisfaction. According to Knill, Carlsson, Chi, and Lezama in Vanichvasin (2021), ChatGPT assisted the teacher in identifying student deficiencies through questions and assessing student learning to give personalized support. Furthermore, students in this study utilized ChatGPT as a tool to come up with ideas for their writing assignments rather than using it as a whole. To further correlate ideas with one another, ChatGPT still needs human hands to touch. Consequently, users of GPT Chat, particularly students, should not rely exclusively on current technology since this may lead to ideas for academic writing tasks becoming sporadic. Researchers must supervise students in order to guarantee that they use ChatGPT responsibly. In line with Fuchs (2023), in order to effectively tackle the challenges, it is imperative for universities to prioritize the utilization of ChatGPT as a supplementary tool, rather than a substitute for, human interaction. Institutions have to establish norms and ethical frameworks for the utilization of ChatGPT, guaranteeing the safeguarding of student privacy and the reduction of prejudice

Additionally, multiple research efforts have documented the utility of ChatGPT as an aid in writing. Evidence supports the effectiveness of ChatGPT in improving writing capabilities. These investigations highlight the prospective benefits of using ChatGPT to boost productivity, improve language skills, and provide precise information. They highlight the potential of ChatGPT to aid writers in rapidly generating grammatically correct content. The outcomes of this research suggest that using the characteristics of ChatGPT may assist authors in improving their writing processes and generating higher-quality material 2024/10/23.

In general, both quantitative and qualitative results indicated that ChatGPT's use in academic writing instruction was very beneficial. A methodical, rigorous, and careful education is necessary for writing. According to Ayranci and Mete (2017), the teacher assumed the role of a mentor throughout the process-based writing education, considering the unique characteristics of each student and not only treating writing as a classroom activity. Based on the provided information and the study results, it is reasonable to deduce that teaching writing is not limited to the classroom alone. Therefore, using ChatGPT to improve writing education outside the classroom setting would be advantageous.

The study also found that ChatGPT has the potential to assist students in improving their academic writing. Possible applications of ChatGPT include promoting diverse perspectives in scientific research, expediting the publishing timeline via writing streamlining, and enhancing the invention process. In addition to these potential outcomes, it has the potential to undermine the autonomy of human researchers and jeopardize the authenticity and excellence of their work. Based on the writers' interactions with ChatGPT, it can be concluded that ChatGPT serves as a valuable research tool for efficiently creating articles. ChatGPT can promptly answer basic inquiries about academic research researchers.

Students' Perceived Experiences on the Use of ChatGPT in English Academic Writing

ChatGPT is a useful study tool since it is also easily accessible to researchers everywhere, whenever they need it, as long as they have an internet connection. Additionally, its ability to provide novel and original results depending on input can support the production of new thoughts, viewpoints, and insights by researchers. By helping with tasks like idea generation, literature summarizing, and writing aids, ChatGPT can boost productivity and give researchers more time to focus on other aspects of their study (Muthmainnah et al., 2024). With all these advantageous, it does not mean that the students will depend on this technology. Based on the interview, the students stated that in writing a paper, the author assumes the role of the primary character, whereas ChatGPT functions as a tool. If there is a cost associated with

its usage, writers should reconsider its usage or opt for an alternative AI for assistance.

In this study, the researchers used a sample research topic to evaluate the ChatGPT's potential for use in academic research. The findings demonstrated that ChatGPT was capable of producing a standard research paper abstract when given precise instructions. However, it cannot consistently create the different research paper portions. In the introductory portion, ChatGPT produces a fictional description of the issue and identifies areas where further investigation is needed. The lack of access to primary sources hinders the ability to evaluate the existing research gap pertaining to a specific research topic. Rahman et al. (2023) state that ChatGPT has the capability to facilitate the development of novel research avenues, the identification of relevant research subjects, and the formulation of hypotheses. Since ChatGPT lacks the ability to generate research questions, issue statements, research gaps, or hypotheses with a high level of accuracy, it is highly recommended that academic researchers only employ it to a limited extent for this essential aspect. Hence, the researchers can proficiently employ ChatGPT for the overarching concept. Nevertheless, it is imperative that they directed the majority of their studies towards themselves.

Additionally, the researchers observed that ChatGPT engages in the fabrication of inaccurate citations while disseminating literature reviews. Upon verifying the references in academic databases, it was determined that all of them were fabricated. The main goal of creating a literature review is to synthesize the literature; hence, the tool must also do that. Due to its inability to access actual data, it cannot perform statistical analysis. The program cannot perform empirical analysis because one cannot upload data files into ChatGPT. But if the transcriptions of the data are available, ChatGPT can produce some respectable results for a few qualitative data studies. As a result, even while utilizing ChatGPT, students must still rely on their own writing abilities to produce text that is coherent, cohesive, and harmonious. Make ChatGPT an extra writing tool rather than a stand-in for people, as stated by (Fuchs, 2023). Therefore, even with ChatGPT's assistance, students still want direction for using ChatGPT sensibly and effectively.

In addition, if the researchers can give all the details about the research methodologies employed, it will also be possible to compose a suitable methodology. To be effective in this situation, your prompt must be precise. For a rough draft of their methods section's design, academic scholars may use ChatGPT. To be accurate, all methodology-related information must be entered into the system by the type of study being conducted (qualitative or quantitative) (Rahman et al., 2023). The following section is just one of several restrictions on utilizing ChatGPT when producing research publications. Within the realm of scholarly investigation, where appreciation for uniqueness and ingenuity is para-

mount, ChatGPT's primary deficiency lies in its inability to generate innovative and fresh ideas. While ChatGPT is capable of generating cohesive and well-structured language, it cannot generate original and innovative ideas. Furthermore, ChatGPT is trained using a substantial collection of textual data that might potentially include biases and errors, leading to distorted results and diminished effectiveness. One drawback is that, being an AI model, ChatGPT lacks accountability for the dependability and correctness of its generated conclusions. In the realm of academic research, where the principles of responsibility and transparency have great significance, this situation may present challenges. Another limitation is seen in ChatGPT, since it cannot fully understand the context of the language it generates. As a result, it can generate irrelevant or incorrect information, especially in situations that need a detailed comprehension of the topic (AlAfnan et al., 2023). Moreover, the researchers' capacity to authenticate the data and ascertain the underlying factors contributing to bias or inaccuracy is constrained by the results generated by ChatGPT's inclination towards intricate interpretation and conceptual complexities. Thus, a human touch is still required when writing academically, even in the age of ChatGPT. Therefore, during this study, researchers fully supervised and guided students in using ChatGPT. In order to prevent assigning high grades to ChatGPT responses, the language teacher will develop a comprehensive evaluation document for their submission-based assessments. In addition, they will engage in the development of a comprehensive rubric that highlights the inclusion of individualized characteristics and alternate options in their response.

Despite these justifications, ChatGPT can be an effective research device, especially when combined with other strategies and methodologies. There is a lot of promise for ChatGPT to be used in academic research, including increased effectiveness, precision, and communication. By making use of these benefits, researchers may better understand their study fields and share their discoveries with a larger audience. The use of ChatGPT in academic research is a fast-growing area. Researchers can anticipate that as technology advances, even additional advantages will become known.

One critical issue that arises with the use of ChatGPT in academic writing is the question of originality. While ChatGPT can assist students in generating ideas and organizing their writing, it also raises concerns about the authenticity of the produced work. It is essential to address how ChatGPT might impact student originality, ethics, and authorship. During the study, it was observed that while ChatGPT helped students formulate ideas, there was a need for students to critically evaluate and refine the generated content to ensure it reflected their original thoughts and understanding. This process of critical engagement is crucial for maintaining the integrity of the students' work. Moreover, the use of ChatGPT should be framed within a pedagogical approach that emphasizes the development of students' independent

writing skills. Educators should provide clear guidelines on how to use ChatGPT responsibly and encourage students to view it as a supplementary tool rather than a substitute for their own intellectual efforts. By doing so, students can benefit from the advantages of AI while still honing their original writing abilities.

The present study is not free from limitations and weakness. The evaluation of student texts was conducted by a single individual, which may limit the robustness and validity of the findings. Future studies should consider using multiple evaluators to achieve inter-rater reliability. This approach can enhance the credibility of the evaluation process by ensuring that the assessment is not biased by the perspective of a single evaluator. Additionally, the dependency of students on ChatGPT for academic writing raises concerns about their ability to achieve similar literacy levels without the software. This dependency might affect their future academic performance if they no longer have access to ChatGPT, particularly if OpenAI transitions to a subscription-only model. The study also did not measure the long-term impact on students' writing abilities without ChatGPT. While ChatGPT can aid in idea generation and text organization, students need to critically engage with the AI-generated content to develop genuine academic writing skills. These limitations highlight the need for a balanced approach in using ChatGPT, where students are encouraged to use the tool as a supplementary resource rather than a primary means of completing their assignments.

CONCLUSION

The present study has demonstrated that integrating ChatGPT into English academic writing instruction significantly enhances students' writing abilities. The experimental group, which utilizes ChatGPT, demonstrates marked improvement in their writing skills compared to the control group, highlighting the tool's effectiveness in supporting the development of academic writing. This positive effect is reflected in the statistically significant differences in test scores between the two groups. These findings suggest that ChatGPT serves as a valuable educational tool, aiding students in generating ideas, organizing content, and refining their writing. Beyond the quantitative improvements, students' perceived experiences with ChatGPT are largely positive. Qualitative feedback indicates that students find ChatGPT to be a helpful resource for accessing accurate information, generating new ideas, and structuring their academic work. However, the study also emphasizes the impor-

tance of students maintaining a balanced approach, using ChatGPT as a supplementary tool rather than becoming overly reliant on it. This caution ensures that students' writing reflects their own understanding and critical thinking.

The implications of these findings are significant for educators and educational institutions. Integrating AI tools like ChatGPT into academic curricula potentially enhances not only writing skills but also digital literacy and critical engagement with AI-generated content. Educators should consider incorporating such tools into their teaching strategies while emphasizing the importance of critical thinking and independent learning. Looking forward, there is a need for further research to explore the broader applications of AI tools like ChatGPT in other aspects of language learning, including reading, listening, and speaking. Future studies can also investigate the ethical considerations and challenges associated with the use of AI in educational contexts, such as issues of dependency, originality, and the potential impact on students' critical thinking abilities. Additionally, examining how AI tools can be tailored to meet the diverse needs of learners, including those from different cultural and linguistic backgrounds, is crucial in maximizing the benefits of AI in education.

DECLARATION OF COMPETING INTEREST

None declared.

AUTHORS' CONTRIBUTION

Eka Apriani: conceptualization; data curation; investigation; methodology; writing – original draft.

Sholihatul Hamidah Daulay: formal analysis; investigation; software; writing – review & editing.

Fitria Aprilia: funding acquisition; project administration; validation.

Abdul Gafur Marzuki: formal analysis; validation.

Idi Warsah: data curation; methodology.

Dadan Supardan: formal analysis; recourses.

Muthmainnah: supervision; visualization.

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The Relationship between Definitional Skills and Listening Comprehension: Preliminary Evidence from Preschoolers to School-Aged Children

Caterina Artuso ¹, Elena Torelli ², Carmen Belacchi ²

¹ University of Genova, Italy

² University of Urbino Carlo Bo, Italy

ABSTRACT

Background: Definitional skills represent the ability to express words' meaning using canonical formats (i.e., 'a cat is a domestic animal that meows'). This complex linguistic production requires lexical, semantic, morphosyntactic, pragmatic and metalinguistic abilities, all implicitly mastered in language listening comprehension. Listening comprehension has a crucial role also in the cognitive linguistic mediated development, especially in promoting future reading comprehension. The relationship between definitional skills and listening comprehension is an underinvestigated topic.

Purpose: The aim of the present study was to explore this relationship in preschoolers and in school-aged children (first and third graders).

Method: Fifty-seven Italian children (age range: 44-106 months) were individually administered both a definition task, that requires to produce the definition of noun, verbs, and adjectives, scored by the Scale of Definitional Competence (Co.De. Scale), and the Test for Oral Reading Comprehension (TOR) that assesses textual and inferential listening comprehension via two brief stories.

Results: We found preliminary evidence of a bidirectional relationship between definitional skills and listening comprehension both in preschoolers and in school-aged children. Age explains a significant portion of variance of definitional skills (over listening comprehension); whereas definitional skills account for listening comprehension (in particular, textual comprehension).

Conclusion: The results are discussed in the light of the bidirectional link emerged from the analyses, promoting an initial reflection on the complex relationship between a metalinguistic ability (i.e., definitional skills) and listening comprehension processes both involved in school achievement.

KEYWORDS

definitional skills, listening comprehension, metalinguistic ability, language development

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Correspondence:
Caterina Artuso,
caterina.artuso@unige.it

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INTRODUCTION

Language development in children is a multifaceted process involving the dynamic interplay of various cognitive, linguistic, and metalinguistic competencies. Among these, listening comprehension and definitional skills represent two critical domains that contribute not only to early language acquisition but also to subsequent academic success. While the role of listening comprehension as a predictor of reading comprehension has been extensively documented (Kendeou

et al., 2007), and definitional skills have been recognized for their importance in metalinguistic development (Belacchi & Benelli, 2017), the relationship between these two abilities remains largely unexplored.

Listening comprehension has been shown to play a pivotal role in language development and literacy. Kendeou et al. (2007) demonstrated through a longitudinal study that early comprehension of audio and television narratives significantly predicts later reading comprehension.



sion. Similarly, Daneman and Blennerhassett (1984) established that complex span tasks, such as the listening span test, are robust predictors of listening comprehension in preschoolers. These findings underscore the central role of cognitive processes like working memory, lexical-semantic access, and syntactic representation in supporting listening comprehension. Moreover, Kim (2015) identified both direct and mediated pathways linking low-level cognitive-linguistic skills (e.g., vocabulary, working memory, syntactic knowledge) with higher-order comprehension monitoring and Theory of Mind, which in turn predict listening comprehension performance.

Parallel to listening comprehension, definitional skills (defined as the ability to articulate the semantic content of words in a structured and explicit manner) are rooted in metalinguistic awareness. Defining words requires not only a robust lexical-semantic network but also the capacity to reflect on language itself, distinguishing between form and meaning (Snow, 1990; McKeown, 1993; Nippold, 1995; Belacchi & Benelli, 2017; Artuso et al., 2024). This metalinguistic competence is crucial for effective communication, as it enables individuals to share complex cultural and conceptual knowledge through conventional linguistic forms. The development of definitional skills is influenced by both intrinsic cognitive factors and extrinsic educational experiences. For instance, Benelli et al. (2006) found that formal education significantly enhances definitional competence, with highly educated adults outperforming their less-educated peers in producing lexically rich and semantically precise definitions. Furthermore, strong definitional skills have been linked to academic achievement, particularly in scientific subjects, where precise terminology and conceptual clarity are essential (Artuso et al., 2022).

Despite the well-documented importance of both listening comprehension and definitional skills, research has largely treated them as separate constructs. However, theoretical models suggest potential overlap, as both abilities engage metarepresentational processes. These include the capacity to adopt another's perspective, monitor one's own understanding, and manipulate linguistic structures to convey meaning effectively (Florit et al., 2014; Lepola et al., 2012). Listening comprehension relies on the integration of lexical, syntactic, and inferential skills to construct meaning from spoken language, while definitional skills require the explicit articulation of these meanings within a conventional framework. This conceptual overlap raises important questions about whether and how these abilities influence each other during developmental trajectories.

The current study aims to address this gap by investigating the relationship between listening comprehension and definitional skills in a sample of preschool and early school-aged children. Building on the premise that both abilities reflect underlying metalinguistic and cognitive capacities, we hypothesize that they are interrelated, with definitional skills

potentially serving as a predictor of listening comprehension. This hypothesis is grounded in the Lexical Quality Hypothesis (Perfetti, 2007), which posits that high-quality lexical representations (characterized by strong form-meaning connections) facilitate efficient language processing. Given that definitional skills reflect a high level of lexical quality through their demand for precise, decontextualized semantic representations, it is plausible that they contribute to the development of listening comprehension.

Furthermore, we anticipate that age will play a moderating role in this relationship, with definitional skills showing greater age-related improvements due to the influence of formal education, while listening comprehension may stabilize earlier as result of natural language exposure. This expectation aligns with previous findings that suggest definitional competence continues to develop throughout the primary school years, influenced by both cognitive maturation and educational experiences (Dourou et al., 2020; Belacchi & Benelli, 2021).

This study seeks to advance our understanding of the interconnectedness of key language competencies by exploring the relationship between listening comprehension and definitional skills. By examining this relationship across different developmental stages, we aim to contribute to theoretical models of language acquisition and provide insights that could inform educational practices designed to enhance both comprehension and metalinguistic abilities in young learners.

METHOD

Participants

The sample was composed of 57 children, monolingual Italian native speaker. Participants were divided into three age ranges: 17 preschoolers aged 44 to 59 months (M age = 51 months, SD = 5.46 months); 20 first grade children aged 70-81 months (M age = 76 months, SD = 3.09 months); 20 third grade children aged 95 to 106 months (M age = 100 months, SD = 2.89 months). No child showed learning disorders or any other neurodevelopmental disorder. The study fulfilled the ethical standard procedures recommended by the Italian Association of Psychology and the Declaration of Helsinki (1964). Written informed parental consent, as well as oral informed child assent, was obtained and collected prior to participation, according to the ethical norms in our university.

Materials and Procedure

Data were collected at school, in a silent room, by a master student ad hoc trained. Two tasks were individually administered in sequence, to tap definitional skills and listening

comprehension as described below. The single session lasted about 30 minutes.

Definitional skills: Co.De. Scale

The scale was devised by Belacchi and Benelli (2007; 2021) in Italian for participants aged 3 years onward (to adult age). The scale comprises 24 stimulus words belonging to three grammatical categories: eight nouns (*ability, clown, donkey, kindness, orange, rivalry, spying, umbrella*), eight adjectives (*blonde, contagious, innocent, polite, risky, round, smooth, thin*), and eight verbs (*to baffle, to burn, to connect, to emigrate, to force, to beat, to think, to tolerate*). Within each category, half of the items were concrete (e.g., *clown, blonde, to hit*), whereas the other half was abstract (e.g., *kindness, innocent, to think*). All responses were codified with a detailed scoring procedure that allows clustering responses into 7 levels hierarchically organized from a non definitional level (score 0) to a formal definition level (score 6) following the assumptions presented in the introduction.

In particular, the 7 response levels (starting from Level 0 where no language is used to refer to the word referent) realize a progressive increase in the analytical expression of semantic content, thanks to the increment of the morphosyntactic articulation and formal complexity of the verbal responses: from a simple Associative word (e.g. Level 1= clown → “circus”), to the addition of some Preposition to the simple word (clown → “at the circus”) or even to the production of Subordinate clauses with no main clauses (clown → “when you go to circus”) (Level 2).

These formally incomplete levels are followed using Autonomous clauses, with narrative/descriptive intent (Level 3: clown → “I often go to the circus with my grandfather”; or “Clowns are funny”).

Then, the expression of Categorical membership is reached (Level 4: clown → “is a character”), followed by the use an Aristotelian phrase structure still without semantic correspondence (Level 5: clown → “is a character who works at the circus”). Finally, the unambiguous identification of the intended referent (Level 6: clown → “a character who makes people laugh at the circus”), achieves the prescriptive semantic equivalence and realizes a perfect circularity between defining and naming (Greimas, 1976).

Example answers and scoring are reported in Table 1.

Children were interviewed individually. To not influence their answers, children were not exposed to possible responses and example of definitions. They were asked to answer the following question: ‘What does the word _ mean?’. The experimenter transcribed their definitions *verbatim*, and the responses were judged on a same 7-level scale by two independent raters who disambiguated uncertain definitions. To avoid suggesting any type of definition, no examples were given; indeed, the objective of the task was to observe whether and how different definitional formats emerge. Thus, all types of answers were accepted. The definitional level was considered as higher as its format was syntactically more articulated, organized, autonomous, and semantically correct.

The seven-level definitional scale and correspondent scores with the examples of possible answers are synthetized in Table 1.

Test for Listening Comprehension

The Test for Oral Reading Comprehension (TOR 3-8, Levorato & Roch, 2007) was designed for Italian children aged 3 to 8 years, representatives of different geographical areas and

Table 1

Definitional Levels, Examples of Prototypical Answers and Scores for Names (cat), Adjectives (blonde) and Verbs (to beat)

Level	Kind of answer	Score
0. Non-definitions	No answer or non-verbal answers	0
1. Pre-definitions	One-word answers, for example associations (<i>cat</i> → <i>moustaches</i> ; <i>blonde</i> → <i>hair</i> ; <i>beat</i> → <i>hammer</i>)	1
2. Nearly-definitions	Initial formulation of sentences, without autonomous forms (<i>cat</i> → <i>with the long mustaches</i> ; <i>blonde</i> → <i>fair hair</i> ; <i>beat</i> → <i>a sports champion</i>)	2
3. Narrative/descriptive definitions	Formally correct and autonomous sentences, with narrative/descriptive content (<i>cat meows</i> ; <i>blonde is someone who has fair hair</i> ; <i>beat means improving a limit</i>)	3
4. Simple categorical definitions	Formally correct and autonomous sentences in simply categorical/ synonymic form (<i>the cat is an animal</i> ; <i>blonde is a colour</i> ; <i>beat is a verb</i>)	4
5. Partial formal definitions	Formal correctness without semantic equivalence (<i>the cat is an animal with four legs</i> ; <i>blonde is a hair colour</i> ; <i>beat means push strongly a lot of times</i>)	5
6. Formal Aristotelian definitions	Formal and semantic correctness and equivalence (<i>a cat is an animal that meows</i> ; <i>blonde is a fair hair colour</i> ; <i>beat means strike someone or something repeatedly</i>)	6

socio-cultural levels. The TOR is the most largely used test for assessment of oral comprehension in Italian children. The original test consists of different tasks for different ages. Each task is composed of two brief stories comparable for difficulty and length. The test shows satisfactory internal reliability as reported in the manual (from 0.52 to 0.72). Indeed, the stories are appropriate, in their cognitive and linguistic demands, to the age of participants. The stories were read aloud to each child by the master student, following the instruction manual (see Levorato & Roch). Comprehension was evaluated via 10 questions per story, each one with four options, orally presented, with words only. Half of the questions were based on information which is already explicitly mentioned (i.e., textual questions) and the other half requested to generate inferences starting from what is said in the text (i.e., inferential questions). The sum of the correct answers for the two stories ranges from 0 to 20 (each story ranged from 0 to 10).

Analyses

We adopted a quasi-experimental design (age was a variable of interest). A correlational design was used to investigate the associations and predictivity among the variables under investigation (age, listening comprehension, definitional skills). First, we conducted a series of analyses (of variance) to investigate age-related effects on the development of definitional skills and listening comprehension. Next, to further investigate age-related effects, we conducted an analysis on percentages of responses per definitional level, to characterize the expected development of this ability. Then, we ran correlational and regression analyses to explore the relationship between these two abilities. In addition, to further evaluate the relationship between definitional skills and listening comprehension, a series of multiple hierarchical regression analyses were conducted to explore the two possible directions of their relation, that is how definitional skills development may impact listening comprehension, and the reverse relationship, as well, that is, how listening comprehension may modulate definitional skills growth. We explored the bi-directional relationship between these two abilities in children, because we had no knowledge of liter-

ature that could give us a robust theoretical basis to justify the rationale, that is, to investigate only one direction of the relationship. For this reason, we investigated both the possible directions previously described.

RESULTS

Age Effects

First, we analyzed the effect of age on the development of both definitional competence and listening text comprehension. Descriptive statistics by age group are reported in Table 2.

A univariate ANOVA was conducted on the definitional skills mean score as dependent variable, and Age as between-participants variable. The results showed that responses vary across different age groups, $F(2, 56) = 16.08, p < .001$. In particular, we found that third graders scored higher than both preschoolers ($t(35) = 3.91, p < .001$) and first graders ($t(38) = 5.30, p < .001$). No significant differences were found between preschoolers and first grade children scores, $t(35) = 1.80, p = .08$.

Then, to distinguish the age contribution to the development of listening comprehension, a repeated measure ANOVA (2 X 3) was run on the two separate components of textual vs. inferential listening comprehension as within-participants variable, and Age group as between-participants variable. The main effect of Age was found, $F(2, 54) = 14.60, p < .001, \eta^2 = .36$. The group of preschoolers scored significantly lower than both the first graders, ($t(35) = 4.51, p < .001$) and the group of third graders ($t(38) = 4.18, p < .001$) on LC total. No differences were found between the two primary school groups ($t(35) = 0.76, p = .45$). See Table 2.

The main effect of Question type was also found, $F(1, 54) = 53.53, p < .001, \eta^2 = .50$: Textual questions ($M = 7.40, SD = 0.22$) reached more accuracy than Inferential questions ($M = 5.62, SD = 0.21$). The interaction between Age group and Question type was not significant, $p = .92$.

Table 2

Descriptive Statistics

	Pre-schoolers	First graders	Third graders	Mean total score
LC Textual	6.10(1.75)	7.85(1.30)	8.24(1.71)	7.40(1.59)
LC Inferential	4.20(1.80)	6.20(1.20)	6.47(1.60)	5.62(1.53)
LC Total	10.30(2.30)	14.00(2.30)	14.70(2.50)	13.00(2.37)
DS	1.86(0.82)	2.34(0.55)	3.11(0.60)	2.44(0.66)

Note. Mean values and SDs (in parentheses) for each measure raw score: listening comprehension (LC) textual, listening comprehension (LC) inferential, listening comprehension (LC) total, and mean definitional skills (DS) score by age group and the mean total scores.

Analysis on Response Percentages per Definitional Level

Further analysis was run to investigate which definition levels are mostly used to define words in the three different age groups, to understand the pattern of development of this metalinguistic skill. Descriptive findings are represented in Figure 1. Independent sample t-tests revealed no significant differences at level 0 (i.e., absence of definition) among the three groups, all $ps > 1$. At level 1 (i.e., pre-definition level), pre-schoolers scored significantly higher than first graders ($t(35) = 2.79, p = .009$), and third graders ($t(38) = 4.58, p < .001$). Also, first graders scored higher than third graders, $t(35) = 2.32, p = .037$.

Levels 2 and 3 revealed no significant differences among the different age groups, all $ps > 1$.

At level 4 (i.e., simple categorical definitions), pre-schoolers scored significantly lower than first graders ($t(35) = 2.77, p = .010$), and third graders ($t(38) = 3.18, p = .004$). No differences emerged between first graders and third graders, $p = .40$.

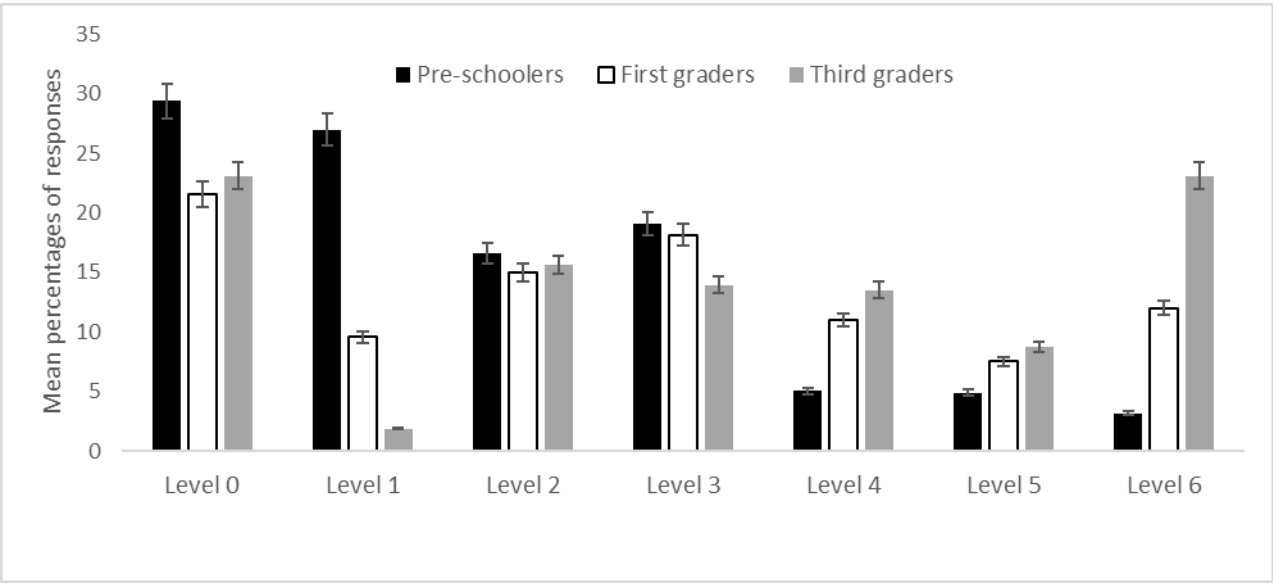
Level 5 revealed no significant differences among groups, as shown in Figure 1 (all $ps > 1$).

Lastly, level 6 revealed that pre-schoolers scored significantly lower than first graders ($t(35) = 4.40, p < .001$), and third graders ($t(38) = 6.58, p < .001$). Also, first graders scored lower than third graders, $t(35) = 3.38, p = .002$.

Correlation and Regression Analyses

In Table 3 correlations are reported between all the target variables and Age, as well as with age partialled out. It can be

Figure 1
Definition by Level



Caption. Mean Percentages of Definition by Scale Level (0-6) and Age Group. Bars Represent SEM

Table 3
Inter-Correlations between Measures

	1.	2.	3.	4.	5.
1. Age	-	.40**	.48**	.50**	.61**
2. LC Textual	-	-	.52**	.87***	.47**
3. LC Inferential	-	.41**	-	.88***	.45**
4. LC Total	-	.85***	.83***	-	.52**
5. DS	-	.30*	.23	.32*	-

Note. All significance tests are two-tailed. *** $p < .001$, ** $p < .01$, * $p < .05$

Caption. Pearson-Moment Inter-Correlations between Measures for the Whole Sample are reported above the diagonal. Correlations partialling out Age are reported below the diagonal

observed that all variables are highly related (all ps ranging from $< .01$ to $< .001$). When partialling out age, the correlations between the four indexes (i.e., definitional skills, total, textual and inferential listening comprehension) remain significant though with lower effect sizes (all ps ranging from $p < .001$ to $p < .05$, except for the inferential comprehension component).

A series of regressions were run with definitional skills as dependent variable and, step by step, Age/listening comprehension measures (sequentially: total, textual and inferential comprehension) as predictors.

As shown in Tables 4, in the first step (see 4.1), age emerged as a significant predictor of definitional skills. In the second step, when Total listening comprehension score was entered, age remained significance, and both age and total listening comprehension were predictors of Definitional skills.

In Table 4.2, it can be observed that, at the second step, textual listening comprehension is a good predictor of definitional skills ($p = 0.20$), beyond Age, but when the inferential component of comprehension is added (at the third step of the regression), the textual component reduces its significance, and the Inferential one does not significantly predict definitional skills.

In the second series of regression (Tables 5), listening comprehension (sequentially: total, textual and inferential measures) were considered as the dependent variable and definitional skills as predictor, beyond age.

At the first step, age emerged as a significant predictor of all listening comprehension measures (total, textual and inferential). In the second step, when definitional skills score was entered, age lost its significance, and definitional skills remained the unique predictor of both total and textual listening comprehension (Tables 5.1, 5.2) but only marginally of inferential listening comprehension (Table 5.3).

DISCUSSION

Age-Related Effects

First, we examined the separate age-related effects on the two abilities, finding the expected increase of both, as children age, though with different and specific trends.

For listening comprehension, we found that school-age children scored significantly higher than preschoolers, whereas no differences were observed between first and third graders, in line with previous findings (Lepola et al., 2012; Levorato & Roch, 2007). Therefore, we confirm that oral comprehension abilities (i.e., basic linguistic skills) develop faster in preschoolers, and become relatively more stable at later ages. In addition, textual listening comprehension

was achieved more easily than the inferential one, in the age groups here considered (see also Levorato & Roch, 2007).

Listening comprehension is a basic ability, and it is plausible that it is particularly influenced by age in the first years of development, when the sharing of the linguistic code is being built up. Afterwards, when children start to master the language in its more complex forms, for example to reflect on the language itself, this metareflective ability (such as definitional skills) becomes prevalent in conditioning listening comprehension.

For the development of definitional skills, no significant differences have been shown between preschoolers and first graders. On the contrary, third graders produced better definitions compared both to preschoolers and first graders. This is plausible and in line with the literature showing that until 6/7 years of age, the definitions are characterized by a descriptive/narrative format (lower levels of the Co.De. Scale, Level 3; Belacchi & Benelli, 2021).

Only starting by 7 years of age, the children's definitions systematically acquire a categorizing format (higher levels of the scale, 4-5-6) in line with the literature on the thematic/paradigmatic shift (see e.g., Artuso et al., 2020; Belacchi et al., 2022; Lucariello et al., 1992). Moreover, our results confirmed that this ability increased with schooling, in agreement with the literature (Artuso & Palladino, 2022; Artuso et al., 2022; Dourou et al., 2020; Gini et al., 2004) and plausibly because schooling specifically promotes the development of explicit linguistic abilities, such as the ability to produce word definitions.

With respect to the development of definitional skills, we have also investigated more in depth the age-related effects by analysing the percentages of responses at the seven different levels of the scale. As represented through Figure 1, by analysing each specific response level, we have shown that younger children report a greater percentage of the simplest responses, that is pre-definitional responses (level 1), characterized by a semantic associative strategy, contextually based (Belacchi et al., 2022). Instead, older children report a greater number of more complex responses, characterized by a taxonomic-hierarchic strategy, such as simple categorical definitions (level 4), and correct formal Aristotelian definitions (level 6). This preliminary finding deserves further analyses to better clarify the time course of definitions development.

The Relationship between Definitional Skills and Listening Comprehension

Afterwards, we focused on the analysis of the relationship between the two constructs.

From the correlation findings (see Table 3) we observe that, though age is significantly and positively associated both to

Table 4
Predictors of Definitional Skills

4.1

Predictors	$R^2(\Delta R^2)$	F	Df	$Beta$	t	P
Step 1	.37(.37)***	31.42	1, 55			
Age				0.60	5.60	.000
Step 2	.44(.07)**	6.88	1, 54			
Age				0.46	3.94	.000
LC Total				0.30	2.62	.011

4.2

Predictors	$R^2(\Delta R^2)$	F	Df	$Beta$	t	P
Step 1	.37(.37)***	32.64	1, 55			
Age				0.61	5.71	.000
Step 2	.43(.06)**	5.71	1, 54			
Age				0.50	4.50	.000
LC Textual				0.28	2.39	.020
Step 3	.44(.008)	0.79	1, 53			
Age				0.47	3.91	.000
LC Textual				0.22	1.82	.075
LC Inferential				0.11	0.89	.379

Caption. Hierarchical regression steps: The role of Age and Listening Comprehension (LC) (4.1 Total; 4.2 Textual and Inferential) on Definitional Skills

Table 5
Predictors of Listening Comprehension

5.1

Predictors	$R^2(\Delta R^2)$	F	Df	$Beta$	t	P
Step 1	.23(.23)***	16.02	1, 55			
Age				0.48	4	.000
Step 2	.32(.09)**	6.88	1, 54			
Age				0.25	1.78	.080
DS				0.38	2.62	.011

5.2

Predictors	$R^2(\Delta R^2)$	F	Df	$Beta$	t	P
Step 1	.16(.16)***	10.05	1, 55			
Age				0.40	3.18	.002
Step 2	.24(.08)**	5.97	1, 54			
Age				0.18	1.17	.248
DS				0.37	2.44	.018

5.3

Predictors	$R^2(\Delta R^2)$	F	Df	$Beta$	t	P
Step 1	.20(.20)***	16.02	1, 55			
Age				0.45	3.73	.000
Step 2	.25(.05)	6.88	1, 54			
Age				0.28	1.89	.065
DS				0.29	1.94	.058

Caption. Hierarchical Regression Steps: The Role of Age and Definitional Skills (DS) on Listening Comprehension Total (5.1), Textual (5.2), Inferential (5.3)

listening comprehension and definitional skills, the effect size is greater relative to definitional skills ($r = .61$), compared to listening comprehension, whose effects sizes are of medium level (LC textual $r = .40$; LC inferential $r = .48$; LC total $r = .50$). This is probably due to the age groups considered in the present study, and to the different developmental patterns of the two abilities considered: a more basic ability such as listening comprehension, being an implicit competence, develops mainly at early ages, whereas, a more specialized ability such as the definitional one, develops later (from 7/8 years of age onward; e.g., Belacchi et al., 2022), when children systematically start using the canonical formats, and continues to improve until adulthood, also thanks to schooling (e.g., Dourou et al., 2020; Gini et al., 2004).

The different role of age in the acquisition of listening comprehension and definitional skills is better underlined by the regression analyses. Age remains the first variable accounting for definitional skills, also when the measures of listening comprehension are entered into the analyses (see Tables 4.1, 4.2). This confirms that mastering the ability to define words requires long learning times, linked to cognitive development and formal instruction (Benelli et al., 2006; Gini et al., 2004). Therefore, it is reasonably partially independent from listening comprehension, the nature of which is more basic and precocious.

On the contrary, when listening comprehension is the dependent variable and age/definitional skills are entered as predictors, age stops being a predictor when it is considered together with definitional skills measures, which assume a specific role to enhance the different comprehension skills (see Tables 5). This finding could be accounted for by the metalinguistic nature of the definitions, which represent a formal and decontextualized kind of knowledge (e.g., Bianco et al. 2022; Cornaggia et al., 2024). Indeed, the metalinguistic awareness (typical of definitional competence) about the importance to provide hypothetical interlocutors with the most effective semantic information, might be extended to other linguistic processes taking place in actual social interactions. In other words, being aware of the existence of shared semantic representational fields, granted by conventional definitions, might foster a similar awareness and more dedicated processes also in natural contexts and inter-

personal communicative exchanges. However, to be sure of this tentative interpretation, higher ages and/or educational levels should be considered, that is, when definitional skills are well-established, as compared to listening abilities, the development of which tends to be more basic and stable.

Our findings represent a first contribution to connect a complex metalinguistic ability (i.e., definitional skills) to listening comprehension. Previously, lower-level and higher-level semantic components were found to be related to listening comprehension (e.g., Perfetti, 2007). To our knowledge, no studies have systematically considered the role of listening comprehension on the development of definitional skills, an ability characterized by meta-linguistic and meta-representative components which make the social sharing of mental representations more effective (Belacchi & Benelli, 2007; 2017). This sharing activity starts being acquired through communicative implicit routines based on listening text comprehension, which is predictive of the ability to make explicit words' meanings (beyond the influence of age). On the other hand, we have found that the age factor decreases its effectiveness on listening comprehension, which is specifically boosted by the same metalinguistic attitude characterizing definitional skills.

Limitations

A few limitations should be accounted for. First, the relatively low sample numerosity (albeit of three different age groups) restricts the study to an exploratory investigation. However, we believe that the novelty of the topic and its heuristic potential can obviate to such a reduced sample. Among future developments, it would be valuable to increase sample numerosity and further investigate possible mediation effects between the variables considered.

Second, the utilization of additional measures could have provided richer and more convincing findings; for example, the assessment of cognitive level, besides vocabulary measures, as well as word knowledge and morpho-syntactic measures could represent the lower-level semantic components involved in definitional skills, being the same involved in listening comprehension. In addition, to better assess the role of definitional skills on comprehension development

and vice versa, longitudinal designs should be implemented in future studies.

Conclusion

We found preliminary evidence of a bidirectional relationship between definitional skills and listening comprehension both in preschoolers and in school-aged children. More specifically, we demonstrated that age explains a significant portion of variance of definitional skills (over listening comprehension), whereas definitional skills account for listening comprehension (in particular, textual comprehension). The present findings represent an original contribution to the relation between the implicit ability to comprehend oral texts, mastered by children at early ages, and the ability to define words, an advanced metalinguistic skill enhanced via formal education and reading activities.

The results of this study have potential implications for future work, especially in teaching and clinical activities. In the first case, the production of definitions could be applied to learning environments, for example school activities enhancing reflection on familiar words' meanings, or even by implementing specific training activities for a feasibility training study on definition productions). In the second

case, it could be useful to assess definitional skills in clinical settings, to explore idiosyncratic semantic fields or peculiar definitional styles, using semantic production tasks, other than the traditional ones (e.g., the vocabulary subtest of the Wechsler battery) limited to vocabulary size assessment, with less detailed coding systems and less apt to pinpoint specific morphosyntactic components and processes.

DECLARATION OF COMPETING INTEREST

None declared.

AUTHOR CONTRIBUTIONS

Caterina Artuso: conceptualization; formal analysis; writing – original draft.

Elena Torelli: data curation.

Carmen Belacchi: conceptualization; methodology; writing – review & editing.

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The Place of Global Issues in Foreign Language Classes from the Perspective of English Lecturers: A Critical Look

Kadriye Dimici 

Izmir Demokrasi University, Izmir, Turkey

ABSTRACT

Background: As an approach aiming to increase students' knowledge and awareness of the world they live in, global education includes using global issues in the lessons. While English language courses offer a flexible platform for discussing global issues, their systematic incorporation remains inconsistent. This situation necessitates the analysis of the integration of global issues in EFL contexts and the revelation of current practices by English lecturers.

Purpose: This case study examines the place of global issues in the English courses offered in Turkish higher education institutions by using critical theory and critical pedagogy as guiding frameworks.

Method: This qualitative study adopts a case study design through interviews with 13 English lecturers from various universities in Türkiye. Data was analyzed using thematic analysis to identify common patterns in lecturers' approaches to global issue integration.

Results: The findings reveal that while lecturers recognize the benefits of incorporating global issues, some challenges hinder effective implementation. These include strict curricula, reliance on standardized coursebooks, institutional limitations, and concerns over including sensitive topics. Moreover, despite the adoption of a critical pedagogical approach by some lecturers, the majority tend to engage with global issues in a superficial manner and this limits their transformative potential in language education.

Conclusion: The study emphasizes the need for well-designed professional development programs to support lecturers in integrating global issues effectively. Language learning programs could be enhanced through a shift toward a more systematic and critical engagement with global topics in English language instruction. Future research should explore students' perspectives on global issue integration and examine institutional policies that influence teaching practices on the incorporation of global education.

KEYWORDS

global education, global issues, English language teaching, critical theory

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Correspondence:
Kadriye Dimici,
kadriyedimici@gmail.com

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INTRODUCTION

Considering the developments in many fields today, education has been subject to changes, and it needs to be transformed to keep up with the necessities of the era. Global education is one of the responses to these changes, offering a new approach to education. Global education aims to enhance students' knowledge and awareness of the world by addressing global problems in lessons (Erfani, 2012; Jacobs & Cates, 1999). In the framework of global education, global issues are handled in the lessons. Global issues are defined as problems that tran-

scend borders, and require collaboration among countries for resolution (Arslan-gilay, 2017; Bhargava, 2006).

Global issues can be incorporated across various disciplines. English classes, with their flexible content, are ideally suited for incorporating discussions on global issues (Pratama & Yuliati, 2016). English teachers play a key role in shifting foreign language learning from a focus on grammar and target culture to one that engages students with global issues (Byram, 1989; Erfani, 2012; Hosack, 2011; Pratama & Yuliati, 2016). Popular foreign language teaching methods, such as the



communicative approach and content-based instruction, emphasize the importance of meaning in language education. Language teachers have a unique advantage in that they can incorporate a wide range of topics into their classes (Jacobs & Cates, 1999).

Although global issues have been emphasized recently, global coursebooks must be more open to including them. World problems should be addressed more in coursebooks, but the themes they choose often reflect a romantic view of British and American culture (Akbana & Yavuz, 2020; British Council, 2009¹; Erfani, 2012; Pratama & Yuliati, 2016). In this context, teaching English through global issues requires language teachers to use different materials and methods independently. Assuming they are responsible for providing their students with a meaningful context, language teachers could find ways to infuse global issues into their classes (Al-Jarf, 2022).

Despite the existence of some studies on the use of global issues in foreign language teaching in other countries (Al-Jarf, 2022; Cates & Jacobs, 2006; Erfani, 2012; Omidvar & Sukumar, 2013; Pratama & Yuliati, 2016; Yakovchuk, 2004), studies on this topic or similar topics are rare in the context of Türkiye (Akbana & Yavuz, 2020; Arslangilay, 2017; Başarır & Sarı, 2022; Kaplan, 2019; Ordem & Ulum, 2021). This scarcity can be attributed to the dominance of traditional teaching methods that prioritize exam preparation and standardized curricula. Additionally, there is limited access to teaching materials that incorporate global perspectives, making it challenging for educators to consistently address global issues in their lessons in Türkiye. Therefore, the current study is especially significant for revealing the current situation and guiding decision-makers and practitioners in utilizing global issues in language teaching.

The difficulties outlined in this study are relevant to educational situations around the world, even if Türkiye offers a special case for comprehending the importance of global issues in English language classes. Rigid laws and restricted access to resources that promote global awareness make it difficult for many nations with standardized, exam-focused curricula to incorporate global issues (Kaplan, 2019; Ordem & Ulum, 2021). Incorporating global education into language lessons becomes not only a pedagogical choice but also a need as transnational challenges like economic disparity, migration, and climate change continue to develop (McGregor, 2023; Pratama & Yuliati, 2016). Therefore, even though the current study is centered on Turkish context specifically, its conclusions may influence policies in other countries with comparable educational systems and constraints (Cates & Jacobs, 2006).

Considering this situation, it seems feasible to organize English lessons under the scope of global issues (Arslangilay, 2017; Cates, 2005; Yakovchuk, 2004). Given students' age, developmental level, and future goals, addressing global issues at the university level is essential, as these students are more suited to discussing complex, abstract concepts. For this reason, it is crucial to investigate the place of global issues in the English courses offered at the university. Using critical theory and critical pedagogy as a framework, this study investigates how global issues function in English language instruction. By adding global concerns like social justice, human rights, and environmental sustainability into language instruction, instructors may help students develop critical thinking and active citizenship in addition to improving their language proficiency. This study explores the extent to which English lecturers in Türkiye adhere to the critical pedagogy principles and how they include global topics in their lessons. The answers to the following research questions are sought in this study:

- RQ#1: What are the perspectives of English lecturers regarding the inclusion of global issues in their language lessons?
- RQ#2: How do English lecturers implement global issues into their classroom practices?
- RQ#3: How do the cultural and social dynamics of the classroom influence the lecturers' approach to global issues?
- RQ#4: To what extent do the lecturers' practices reflect a critical pedagogical approach when addressing global issues in their lessons?

LITERATURE REVIEW

Global Education

In recent years, global education has been on the agenda of those who want to add a transformative function to education. It is regarded as a pedagogical approach rather than a teaching technique (Pratama & Yuliati, 2016). There are lots of pedagogical approaches that fit well with global education. These approaches range from Freirian methods to content-based language teaching, from cooperative to project-based learning (Cates & Jacobs, 2006). Rather than a mere content addition, it involves a pedagogy, putting global education with a paradigm change in education.

Global education focuses on introducing students to the knowledge and abilities necessary for them as global citizens (McGregor, 2023). Cates (2000) suggests that global education goals could be categorized as knowledge, skills, attitudes, and action. Knowledge comprises information on other nations and civilizations and the reasons and solutions

¹ British Council. (2009). Equal opportunity and diversity: The handbook for teachers of English. https://www.britishcouncil.org/sites/default/files/eod_handbook.pdf

to major international issues. Critical thinking, problem solving, teamwork, resolving conflicts, and viewing problems from several angles are all examples of skills. Global awareness, cultural appreciation, tolerance for diversity, and empathy are examples of attitudes. Global education's goal is to actively resolve global concerns and difficulties, starting with local issues and progressing to global ones (Cates, 2000; Pratama & Yuliati, 2016). These educational approaches form a foundation for preparing global citizens capable of addressing transnational concerns.

Global Issues

Global education includes learning about problems that transcend national borders but also covers the interconnection of economic, political, technological, and cultural systems (Cates & Jacobs, 2006). Global issues are defined as "issues of global significance" or "problems in the world" (Omidvar & Sukumar, 2013, p.151). As the content of global education, it is possible to mention at least four issues "peace, human rights, development, and environment" (Pratama & Yuliati, 2016, p.719). Although there is no limitation on the global issues, the ones most mentioned could be listed as gender equality, migration, environmental problems, health, poverty, respect, solidarity, and peace (British Council, 2009²; United Nations, 2023³). Yakovchuk (2004) lists environmental issues (pollution, global warming, recycling), peace education issues (wars, refugees), human rights issues (racism, gender), intercultural communication issues (global citizenship, multiculturalism), socio-economic issues (poverty, advertising), health concerns, and linguistic imperialism. Similarly, Bhargava (2006) categorizes global issues under local economy, environmental and natural resources, human development, peace and security and global governance. A similar categorization regarding global issues is offered by Kaplan (2019) as follows: environmental education, gender issues education, health issues and education, human rights education, linguistic issues education, peace education, socio-economic issues, and others. For this study, global issues are defined as transnational problems that have widespread impacts across nations and regions. These issues encompass challenges such as environmental crises, human rights violations, and socio-economic inequalities, with a focus on concerns that often affect developing regions and the disadvantaged areas.

While some scholars and teachers may assume that addressing global issues in the classroom could foster pessimism among students due to the nature of the challenges discussed, it is essential to present these issues in a way that highlights positive solutions and encourages proactive thinking. For example, Cates and Jacobs (2006) give examples of optimistic issues that could be covered, such

as efforts to eradicate poverty and initiatives to struggle with prejudice. Students are taught how to connect and get deeper insights into global problems, trends, and developments (McGregor, 2023). Global concerns are often not handled rationally by the media, and reasons and causes could be neglected or overlooked. Therefore, it is essential to give students the knowledge and skills to critically evaluate these concerns (Omidvar & Sukumar, 2013). Burnouf (2004) suggests using various angles in social sciences by distancing from a dominant European perspective.

Global issues are critical, so students must respond to them as world citizens (Pratama & Yuliati, 2016) by moving from a mere understanding of each global issue to an awareness of their interrelationships (Çavdar, 2006). It is important to acknowledge that while students may not have the direct power to solve these global issues, developing awareness and empathy can be a vital step toward understanding and addressing such challenges. However, showing sympathy and attention and developing understanding and responsibility toward those issues could serve to reduce these problems (Bland, 2015; Pratama & Yuliati, 2016). Otherwise, educators continue their work, neglecting global problems.

Global Issues in Foreign Language Education

These issues could be covered in all disciplines using appropriate methods. The relationship between language instruction and global challenges has grown in importance in recent years. Global issues transnational concerns that call for cooperative solutions offer a crucial framework for the reform of education (Bhargava, 2006). In the context of foreign language education, the integration of global issues serves not only as a medium for language learning but also as a pathway to engage students in real-world challenges. This integration, however, presents unique pedagogical demands, particularly in English as a Foreign Language (EFL) setting, where teachers are tasked with both language instruction and raising global awareness.

Global issues are included into English language instruction in ways that go beyond adding new material. It provides a chance to include pupils in conversations about real-world issues that improve language learning (Cates, 2022). For instance, teachers can promote critical thinking while also advancing language proficiency by discussing issues like gender equality, migration, and climate change in English lessons (Pratama & Yuliati, 2016). Global concerns are incorporated into language education to enable meaningful interactions and allow students to address matters of global importance in the target language as the field moves away from traditional grammar-based instruction and toward more communicative and content-based approaches. This

² British Council. (2009). *Equal opportunity and diversity: The handbook for teachers of English*. https://www.britishcouncil.org/sites/default/files/eod_handbook.pdf

³ United Nations. (2023). *Global issues overview*. <https://www.un.org/en/global-issues>

strategy is in line with the objectives of global education, which aim to equip students to be knowledgeable global citizens who can comprehend and interact with complicated international issues (Cates, 2005). As a result, including global issues into education is not just an instructional decision but also an essential pedagogical technique that improves language competency and global consciousness.

The flexible curricula of foreign language classes in terms of content also facilitates the use of global issues (Byram, 1989; Erfani, 2012; Hosack, 2011). As the world's most learned language, English has become an international language many cultural groups speak. This fact necessitates using global education while learning English because students need to understand global problems through English. Teaching English does not include the four skills of reading, listening, writing, and speaking anymore. Instead, it must include ways to develop the student's thinking skills and worldviews regarding world issues. In this way, students' awareness of global concerns could be raised, and they can learn a foreign language effectively simultaneously (Cates, 2005). Some initiatives such as GILE (Global Issues in Language Education), Linguapax by UNESCO, PGL (Peace as a Global Language Conference), and AYF (The Asian Youth Forum) are among the examples that show effort to connect global issues and language education (Gürsoy & Sağlam, 2011).

Including global issues as «subject matter» (Yakovchuk, 2004, p.30) ties nicely with content-based language teaching. The world's problems are a meaningful context for language education (Gürsoy & Sağlam, 2011). Language learners' fluency is no longer critical if students lack communication skills and are ignorant of global concerns (Erfani, 2012). Different materials on global problems could be employed by language teachers, leading to an increase in the thinking and communication abilities of students (Omidvar & Sukumar, 2013). Therefore, content-based instruction through global issues effectively teaches a language because thinking critically is stimulated by a context of challenging topics (Cates, 2005).

Despite the growing importance of global issues in language education, it is impossible to assert that language coursebooks align with these changes and requirements. Global foreign language coursebooks usually deal with topics regarded as harmless (British Council, 2009⁴; Erfani, 2012; Pratama & Yuliati, 2016), and they do not focus on controversial topics that affect the different parts of the world, although this would be more useful for students in terms of connecting the language learning and daily life issues (Akbana & Yavuz, 2020; Ordem & Ulum, 2021). If a global concern is included in a coursebook, it is primarily superfi-

cial and trivialized (Çavdar, 2006). Considering the emphasis on global issues in EFL classes (Council of Europe, 2020⁵; Erfani, 2012), some addition and adaptation are required by language teachers. In the absence of support from global coursebooks to include global issues, the responsibility is on the shoulders of language teachers. Teachers could find new ways to integrate these issues into classes, and students could be confronted with different perspectives (Akbana & Yavuz, 2020; Al-Jarf, 2022; Arslan & Curle, 2024; Renner, 1993).

In order to develop globally conscious citizens, the literature on global education mentioned above highlights how crucial it is to address transnational concerns in the classroom (Cates & Jacobs, 2006). This objective is in line with critical theory's emphasis on comprehending and questioning societal power structures (Thompson, 2017). Through the incorporation of global topics like climate change and human rights into English language instruction, teachers provide pupils the chance to critically interact with their environment. Furthermore, the incorporation of global issues in the classroom advances the transformative learning objective of critical pedagogy, which encourages students to challenge social conventions and act on urgent global crises (Freire, 2005).

Theoretical Framework

Although it is discussed that global education needs a well-designed theoretical framework, there are valuable attempts at this (Burnouf, 2004; McGregor, 2023). However, global education practitioners do not use them most of the time, which might cause ineffectiveness, although this result is not their intention. Therefore, it is essential to be aware of the frameworks and theories related to global education and include them in the curriculum design process (Mc Gregor, 2023).

One of the most well-known attempts belongs to Pike and Selby (1988). Their conceptual framework regarding global education is called «the four dimensions of globality» These four dimensions are spatial, temporal, issues, and process. This framework emphasizes the impossibility of handling global challenges through Newtonian thinking and requires holistic, systemic thinking that could address the interconnectedness and complexity of the world (McGregor, 2023). Another well-known contribution to global education is made by Hanvey (1976), who suggested a comprehensive definition of global awareness based on five qualities. These include perspective consciousness, state-of-the-planet awareness, cross-cultural awareness, knowledge of global dynamics, and awareness of human choices (Burnouf, 2004).

⁴ British Council. (2009). Equal opportunity and diversity: The handbook for teachers of English. https://www.britishcouncil.org/sites/default/files/eod_handbook.pdf

⁵ Council of Europe. (2020). Common European Framework of Reference for languages: Learning, teaching, assessment – Companion volume. Council of Europe. www.coe.int/lang-cefr

The mentioned frameworks are valuable since they set some boundaries and suggest ways to include global education for theorists and practitioners. Although not mentioned much in the literature, global education and addressing global issues are highly tied to critical theory. The larger paradigms of critical theory and critical pedagogy, which both highlight the role of education in challenging power structures and advancing social justice, are the framework in which this study is situated (Bozkurt & Topkaya, 2023; Freire, 2005). Through its emphasis on identifying and resolving systematic injustices, critical theory offers a lens through which the teaching of global challenges in language education can be seen. It encourages educators to critically assess the information and methods they use, ensuring that instruction goes beyond rote memorization or surface-level engagement with global subjects.

Similarly, critical pedagogy promotes a participatory approach to education that gives students the tools they need to question prevailing viewpoints and take part in life-changing experiences (Freire, 2005; Kaplan, 2019). The synthesis of these two theoretical frameworks is crucial for this study, because it serves as the basis for analyzing the methods English lecturers use to address global concerns in the classroom. The study examines power dynamics in the classroom and how they could impact how global concerns are taught by employing critical theory. In addition, critical pedagogy provides a useful framework for putting these ideas into practice. Together, these theories highlight how important it is to incorporate global issues into English language instruction in order to promote critical consciousness and language proficiency.

To link critical pedagogy and language education, Ordem & Ulum (2021) explain the participatory approach and claim that second language teaching needs to include political and social issues. However, they state that the participatory approach is utilized rarely, considering textbooks and curricula that keep up with the requirements of neoliberalism. This neglect causes students to lack the chance to discuss sociopolitical issues through language education (Ordem & Ulum, 2021). On the contrary, the participatory approach in the framework of critical pedagogy highlights real-world events to be used as discussion content in language classes. showed that participatory approaches help students to engage critically with social issues such as racism and sexism. Their findings suggest that when students have a say in content selection, their motivation and critical engagement increase, and this reinforces the potential of critical pedagogy in language instruction. This finding moves the discussion on the use of global issues in language education one step further because just adding content or theme related to world issues may not serve the goals of global education (Cates & Jacobs, 2006; Yamashiro, 1996). Instead, as a global educator, a language teacher must focus on sociopolitical concerns by selecting themes on the problematic reality in the learners' lives and aiming at "not only changing

the nature of schooling but the wider society" (Erfani, 2012, p.2415). To do this, students' engagement is also important, and their ideas need to be considered through negotiation as the study of Essabari and Hiba (2025) revealed. By situating the current study within critical theory and critical pedagogy frameworks, it is aimed to determine whether language instruction reinforces or challenges prevailing beliefs and how students' critical consciousness might be fostered by utilizing global issues.

METHOD

Research Design

The holistic single case study design, one of the qualitative research methods, was used because the study aimed to analyze the use of global issues in foreign language classes in depth with an integrative approach (Yin, 2003). According to Yin (2003), the single-case approach fits well for testing theories using crucial cases and examining explanatory situations. The case study design is also connected with critical theory, which sets the overarching understanding for the discussion of this study. Critical theorists utilize case study methodologies (Peca, 2000). However, critical theorists go beyond a methodology and focus on self-reflection to understand the individual and social reality through the exposition of power structures.

Participants

In Türkiye, many universities offer education in English, which causes students to study in preparatory classes before starting their departments. This preparatory class includes intensive exposure to English and prepares them to reach the B1+ level. This study focuses on the use of global issues in the context of preparatory classes. Considering this, the data for this study were obtained from 13 English lecturers working at five different universities in İzmir, Türkiye. İzmir is a developed city in the west of Türkiye with many universities. The reason for choosing that city to get the data was because the researcher also worked and lived in İzmir, making it easier for her to reach the participants.

Using a maximum variation sampling method, the researcher tried to include lecturers from different genders, nationalities, and years of working experience to enrich the data. A detailed breakdown of the participants' demographics is provided in Table 1. The names of the universities that participants worked were coded to provide confidentiality. Two of the lecturers were not Turkish, and there were nine female and four male participants. Their work experience ranged from four to 25 years. Two lecturers had a Ph.D. degree, eight had a master's degree, and three had a bachelor's degree. All the participants stated that they had been abroad for professional purposes.

Table 1*Demographic Information about the Participants*

Participant Code	Workplace	Years of Experience	Gender	Nationality	Educational background	Experience abroad
P1	University A	10-15	Male	Turkish	PhD	Yes
P2	University A	10-15	Female	Turkish	Master	Yes
P3	University A	15-20	Female	Turkish	Master	Yes
P4	University B	15-20	Male	Turkish	Bachelor	Yes
P5	University B	0-5	Female	Non-Turkish	Master	Yes
P6	University B	25-30	Female	Turkish	Bachelor	Yes
P7	University B	0-5	Female	Turkish	Master	Yes
P8	University C	10-15	Female	Non-Turkish	Bachelor	Yes
P9	University D	5-10	Female	Turkish	Master	Yes
P10	University E	5-10	Male	Turkish	Master	Yes
P11	University E	10-15	Female	Turkish	Master	Yes
P12	University E	20-25	Female	Turkish	PhD	Yes
P13	University E	5-10	Male	Turkish	Master	Yes

Data Collection Tools and Methods

The researcher prepared a semi-structured interview form consisting of seven main questions. The questions were designed considering the related studies and experience of the researcher as an English lecturer and a researcher working on multicultural education and curriculum development. The construction of the interview questions was based on the critical dimensions of the study's theoretical framework. The questions mostly focused on understanding what perceptions English lecturers had in their minds regarding global issues, what practices they made in their classes, and the advantages and disadvantages of using global issues in EFL classes, all of which helped to collect data regarding the first and second research questions of this study. The two interview questions asking information about the cultural diversity in their English classes and the effect of that diversity on including global issues were covered to answer the third research question. Lastly, the lecturers were asked about whether there were things that they took into consideration while using global issues and this provided data for the last research question. Moreover, all the interview questions provided data for the last research question because most interview questions aimed to get the opinions and classroom practices of English lecturers and the responses explored the link between critical pedagogy and classroom practice, addressing both the theoretical and practical aspects of this research.

After the form was arranged, an expert opinion was taken from two academicians. One of them had experience in qualitative research and curriculum, whereas the other

one's experience was related to social sciences education and using values in education. Based on their suggestions, minor editions were made to clarify the interview questions. A pilot interview was conducted with an English lecturer, and the questions' understandability was tested.

Although interviews are a useful tool for understanding lecturers' perspectives, it is more difficult to completely comprehend how these impressions are translated into actual classroom practices when classroom observations are lacking. A deeper, more complex knowledge of how global challenges are incorporated into English language instruction could have been obtained from observational data. However, because of time limitations and institutional contexts during the time of data collection, observational data was not obtained and this limitation caused this study to end up with interview data. Especially, the second and third research questions were tried to be analyzed based on the participants' opinions although observations could have provided richer data.

The data was collected during the spring term of the 2021-2022 academic year. Five participants agreed to join the face-to-face interview in their rooms at school. In contrast, eight participants accepted online interviews because of pandemic conditions, which affected the whole world due to COVID-19. The duration of the interviews changed from 15 minutes to 41 minutes, with a total record of 310 minutes. Eleven of the interviews was conducted in Turkish and two of them with non-Turkish participants were conducted in English. The Turkish transcripts were translated into English by the researcher.

Data Analysis

The content analysis methodology used in the data analysis was that of Creswell and Poth (2018). Open coding was used to find early themes about the lecturers' incorporation of global issues in the classroom following the transcription of the interviews. Axial coding was then used to further develop the emerging topics and create links between the lecturers' methods and the critical pedagogy theoretical framework. This procedure made it clearer how global issues were handled as both a subject and a means of promoting critical consciousness. To make sure that every code addressed the theoretical issues as well as the research topics, the thematic organization was continuously reviewed.

Procedures

The researcher believes that using global issues in language education is a good idea, and she works to include this idea in her teaching. As a result, from the study's design through the presentation of the results, the researcher's viewpoint may be present throughout the entire process of the investigation.

This study's ethics committee approval was attained by considering the relevant research ethical guidelines. A consent form containing information about the study's objectives was given to the participants.

In qualitative research, ensuring the trustworthiness of the study is crucial. Instead of focusing on traditional concepts of validity and reliability, this study adopts criteria for trustworthiness such as confirmability, transferability, credibility, and dependability. To ensure these criteria, several measures were taken. First, the interview questions were pilot tested with an English lecturer not involved in the final sample. This pilot test helped refine the questions for clarity and relevance, enhancing the reliability of the data collected.

Moreover, expert reviews were sought from two academicians familiar with qualitative research methods and global education. In terms of validity, the triangulation method was employed by selecting quotes from diverse sources. Additionally, exercising confidentiality by using pseudonyms for each participant and releasing detailed participant information and context enhanced the trustworthiness of the study.

RESULTS

Emergent Themes

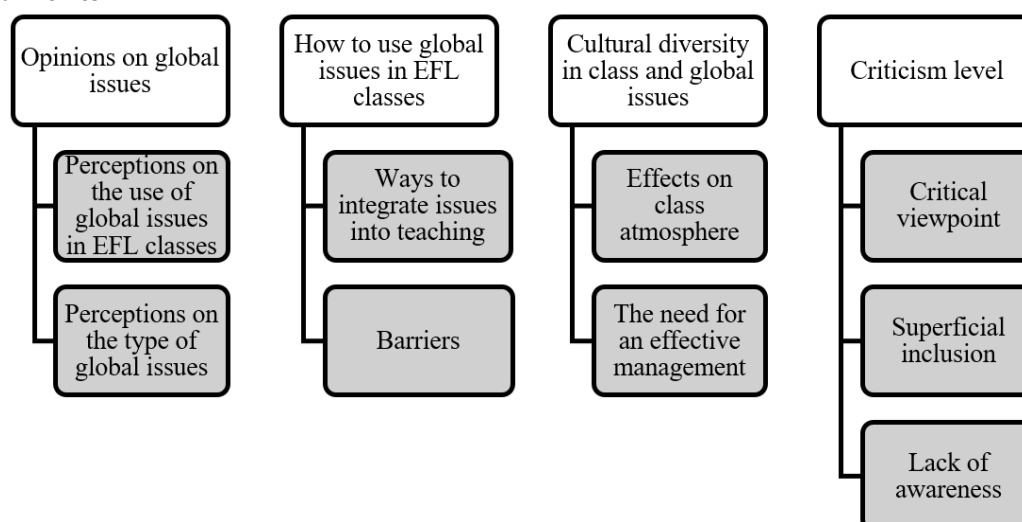
Based on the data collected from 13 lecturers working at five different universities, four themes emerged: (1) Opinions on global issues, (2) How to use global issues in EFL classes, (3) Cultural diversity in class and global issues and (4) Criticism level. Under these four themes, nine sub-themes and 18 codes were reached. The themes and sub-themes can be viewed in Figure 1 below. All the themes and codes are explained with the contribution of quotations.

Opinions on Global Issues

The first theme gathered the findings related to the participants' opinions on using global issues in EFL settings. Firstly, almost all participants reflected a positive view and stated that global issues did not take place much in the main materials used as coursebooks. Still, they were necessary for university students considering the requirements of multicultural countries today: «We are trying to make reinforcements to open up their worldview a little more» (P10); «Especially for university students, I attach great importance to the youth following the agenda and their development of general culture» (P12); «Talking about real life and interesting topics when students lose their motivation, and to do this on a global scale as much as possible is important because we teach English. They will need this in different parts of the world» (P7).

Figure 1

Themes and Sub-Themes



The advantages of using global issues in EFL classrooms was explained by the participants as follows: raising awareness, gaining 21st-century skills or higher order thinking skills such as critical thinking, better communication in class, staying updated for the lecturer, having an interest in world issues, sharing ideas, thinking in the long term, breaking prejudices, and motivating the students: *"They can take a very narrow perspective from time to time. To improve this, I would like them to gain 21st-century skills, such as creativity and critical thinking, and to gain awareness for the problems existing in the world"* (P10); *"Since there is a generation that also likes to express their opinions, I think they like to give their opinions on such serious issues"* (P11); *"I think that talking about things that happen in many countries with different people will give them a perspective that will enrich their conversations when they go abroad"* (P2).

The last code under this sub-theme was about the disadvantages of using global issues in EFL classrooms. Although they were usually on the side of the advantages, a few lecturers pointed out possible drawbacks such as sensitivity on some topics, overemphasis on global issues, the lack of preparedness, and transfer to L1: *"The disadvantage is that since we live in Türkiye, some students can show various sensitivities when such issues are sometimes related to immigration, Syrians or trans people"* (P1); *"Yes, there is an input in English, but if there are situations such as moving away from the subject or students shifting to Turkish, then, of course, it may be risky for lectures"* (P7).

The second sub-theme, perceptions on the type of global issues, showed what participants regarded as a global issue. Some issues emphasized mainly by the participants were as followed: environmental problems, global warming, globalization, sustainable development goals, war, discrimination, pandemic, vaccination, human rights, animal rights, child brides, gender, refugees, tolerance: *"Women, I can say gender issues. Climate, environment, nature issues"* (P11); *"A lot of topics, like environmental problems. The inequality between men and women falls under this. Early marriage of women and human rights. Such political events that can arise at a time that concerns the whole world can be included"* (P9).

Although they listed many topics under global issues, some participants explained that some issues would be avoided in a class environment. They named these topics as sensitive, dangerous, taboo, or knife-edge. These topics were mostly related to gender, LGBT, democracy, politics, and religion: *"Because I stick to the rule: no politics, no sex, talks on no war during the lessons. That may create a dispute in class"* (P8); *"I don't go into some issues at all; the first of them is politics"* (P4); *"It is always said that we should not get into sensitive issues. Among sensitive issues, politics, religion, etc., yes, I do not prefer"* (P11).

However, some lecturers believed all topics could be discussed in class, provided the country's cultural context is

respected: *"Refugee topic was opened. I put that issue on the shelf at that time. As I said, this is not my discomfort, but because I avoid any potential thing that may come from the country and the institution"* (P9).

Some topics would be sensitive. For example, poverty. I had a student from Yemen. Yemen is a country which has this problem, so talking openly about these things may hurt him or other students may not have full knowledge about this topic (P5).

Regarding the topics participants favored or disfavored, their educational background and interests were seen to be the leading indicators of this preference: *"The training I received and my perspective on life. Because my education is related to cultural studies and social studies, it is highly related to such subjects"* (P1); *"Obviously, I think I always take advantage of my interests. As I just said, I use gender issues a lot because I am interested in gender studies at work"* (P11); *"I love to talk about the environment. It seems more important to me that if the teacher has a tendency, s/he directs the student to certain subjects in that way, the student inevitably approaches them"* (P9).

How to Use Global Issues in EFL Classes

Under the second theme, how to use global issues in EFL classes, the findings related to what the participants do on global issues in their classes were categorized under two sub-themes: ways to integrate them into teaching and barriers. As some lecturers stated, integrating global issues into education was mainly done by aligning these issues with the objectives, the primary material, and the assessment. They added some extra materials to the existing themes in the main coursebook, and they said different viewpoints that did not take place in the coursebook: *"I determine the themes myself in line with the objectives in my curriculum. I can change those themes according to different needs and interests in different groups"* (P3).

All the selected books have themes. I am developing those themes. For example, suppose it is family. In that case, I can provide extra materials about women's rights, the situation of women at home, or the inclusion of multiple studies from gender and queer studies. These are often not found in mainstream educational materials (P1).

Regarding the methods they used to integrate global issues into their teaching, participants explained that they usually applied discussion activities, used authentic materials, collected information on the topic beforehand, and used important days such as Women's Day as a context for this process: *"When I write questions and examples, I try to use more sentences about these subjects. Since it is not a direct target of the education curriculum, I usually use it as the implicit curriculum"* (P1); *"I link it to the day in the warm-up section. I pay attention to them as if I am trying to make students sensitive to the agenda and to attract them into my lesson gradually"* (P12).

Although participants were in favor of using global issues in their classes, some also focused on the workload because of

this process: «*These are things that always steal time*» (P12); «*Things are going well when there is such a preparation stage at the beginning, but of course, extra time is always required for this*» (P9); «*It's very challenging for me because I'm always trying to find new themes, new activities. But I think it's worth it*» (P3).

Some factors prevented lecturers from using global issues, as explained by a strict curriculum, a global coursebook, and a standard assessment system. Because they had to comply with the other classes, enough time could not be given to global issues: «*Unfortunately, we are very intense on schedule, and we have to stick to the book, main coursebooks. We should be consistent in what we teach so it creates a problem*» (P8); «*It is needed to mention the disadvantage of working at the preparatory school because of the lack of movement as a result of a structured curriculum. Unfortunately, I cannot design a course from scratch because of the strict curriculum*» (P12); «4» (P13).

It doesn't work because, of course, you can always make individual efforts, but when the program is intense, and the evaluation is made directly from the book, that ability does not develop, it remains barren. Unfortunately, what you do does not go anywhere in the eyes of the student because it will not come out in the exam (P2).

On the other hand, some lecturers did their best to include global issues despite a busy syllabus, though since these topics were more important for them: «*Sometimes the program is hectic, but I usually give priority to it if there is such a topic in my mind, the other can be completed next week. Such a topic is current and needs to be discussed at that moment*» (P9); «*Yes, I do not use the main material. I can justify it even if there is trouble, and I don't plan to give up on this implementation*» (P3).

Another barrier mentioned by some participants was the language. Some lecturers believed that teaching a higher language proficiency was necessary to discuss global issues: «*I honestly don't have time for this in level one, so I can cover them more at higher levels*» (P11); «*Talking about politics may be something that might lower the motivation of an elementary-level student rather than raising them*» (P7).

Interestingly, we observe that as the student's proficiency level increases, the rate of general knowledge increases. The child with a higher language proficiency is more sensitive and more knowledgeable. When we look at it that way, I practice debate in high level classes (P12).

However, a few lecturers stated that global issues could be used at every level: «*No, I do not discriminate. I try to use them in all levels*» (P1).

Usually, we open a discussion in the class, and they want to say something, but their English is not enough. Then they say 'I won't say it'. Then I try to encourage them. Because I see that the biggest problem is not that they can't think or not be aware of it (P9).

It's going pretty well. I use authentic material accordingly. I always guide them in the difficulties experienced at the language proficiency. I allow them to use it in Turkish at times

because they need to acquire that skill, especially in critical thinking (P3).

Cultural Diversity in Class and Global Issues

The third theme was determined to be cultural diversity in class and global issues. It included the findings on the effect of using global issues in a diverse class and how the integration could be managed effectively. Most lecturers stated that their classes had students from different cultural backgrounds. This diversity mostly had a positive effect on their classes in terms of the feeling of not being alone, comparisons between countries, developing respect for differences, enriching class discussion, and providing a safe environment for discussion: «*I had a Syrian student last year, we were talking about the war and that girl told us about the war. The story of someone who experienced it directly affected the students a lot, creating a different awareness*» (P2).

I like it very much that they respect each other's opinion and are together. It enhances the instruction because, as I said, I get different answers when I ask a question, and it takes me to other places. It can help students get to know different cultures. They can develop their empathy, put themselves in their shoes and question what kind of life they can have (P4).

Although the contribution to the class atmosphere happened more when global issues were included, the undeniable fact that some conflicts could arise was also emphasized by some lecturers. This situation was mainly linked to the country they live in, the lack of similar activities in the educational lives of students before, and family backgrounds of some students: «*When there are social taboos and pressures they feel, there are students who are very closed to those subjects. They say 'No, don't ask me, I don't talk like that'*» (P9); «*It may create some conflicts, they might hold different views on certain subjects, and teacher might be in between trying to calm people down*» (P8); «*When we ask students a question, they may take the question to other places, such as east-west conflicts in Türkiye. In some cases, that's why I think attention should be paid to this*» (P13).

Considering the possibility of some conflicts in the classroom, different techniques could be used, or teachers could be more careful while using global issues. Participants emphasized the need for using appropriate language, avoiding discriminatory behaviour, having a balanced stance for every culture, being impartial, and determining class discussion rules with students: «*I think it's up to the teacher's skill, you know, it's about how they give this subject. They should pay attention to their language; above all, they should not use discriminatory language. They should choose their words carefully*» (P1); «*I don't underestimate any culture in any way I care about the most. I don't overestimate our own culture either*» (P4); «*So I say I can talk to you about some dangerous topics, friends, in any way possible, but the classroom is not suitable for this. I have often said that we can have tea and talk outside*» (P6); «*I think it is necessary to look at such matters objectively,*

not as humiliating, or judgmental. As I always say, that matters» (P13).

Criticism Level

The last theme was about the criticism level of the participants regarding global issues in language education. Three sub-themes emerged in this part, critical viewpoint, superficial inclusion, and lack of awareness. There were only a few participants (P1, P2, P3, P9) that focused on the criticism of global issues and think that the inclusion of different viewpoints, power dynamics, and causes of the current situation need to be mentioned in classes: «*The perspective given by the book may be different; the point of view that I have added may be different. I don't change the theme in that context; only the viewpoint*» (P2); «*I think people should face the facts; that's the reality of our lives. I think this is another problem; we are trying to bury our heads in the sand, which I sometimes do. Some things might hurt us*» (P3).

Most participants' opinions on including global issues in language education reflected a superficial infusion (P10, P13, P12, P11, P4, P7, P5). They either included global problems that existed in the coursebook by aligning with the objectives of the curriculum or avoided their use depending on the type of global issue. However, they would favor this inclusion in a different academic or country setting: «*If it's relevant to the lesson in some way here, of course, the target structure is also essential. Ok, it's authentic, but it needs to be meaningful as well. It must match the course's objectives*» (P7); «*Of course, I would like to use these topics. It shouldn't be enjoyable to use the book all the time*» (P10). In the last category, the opinions of two participants (P6, P8) showed that their global awareness is low, and they could not integrate it into their classes using appropriate methods: «*Personally, these topics wouldn't be my first choice*» (P8).

DISCUSSION

Tendency to Integrate Global Issues

The results of this study indicate that the lecturers generally held positive views regarding the inclusion of global issues in English teaching. Lecturers favored topics such as environmental issues, discrimination, and gender, which align with global concerns. Other studies in Turkish context (Arslan & Curle, 2024; Çavdar, 2006; Kaplan, 2019; Ordem & Ulum, 2021) support this view, emphasizing the sympathy of teachers toward socio-political issues. In this study, topics like environmental issues, discrimination, and gender were mainly favored. However, a few lecturers explained that the use of

global warming topic was emphasized in the coursebooks, thus causing boredom for some students. The educational level of the participants seemed to affect using global issues positively in this study because having a graduate degree was mentioned to show them other paths to teach English, including questioning the teaching of language education.

The advantages of using global issues as listed in this study are compatible with other studies (Başarır & Sarı, 2022; Omidvar & Sukumar, 2013). These contributions were on raising awareness, sharing ideas, an opportunity to speak, becoming sensitive about these issues, creating curiosity, improvement in the skills of research and higher-order thinking skills. In another study conducted in Türkiye, students' opinions were taken and the advantages mentioned were learning to look from different perspectives, gaining knowledge about the world and improvement in speaking skills (Bayraktar-Balkır, 2021). Those results also coincided with the current study.

Another important finding in this study was some participants' acceptance of some global issues as sensitive, dangerous, or taboo. They mostly listed politics, sexuality, ethnicity, and religion under these issues. Similarly, topics such as terrorism seem to be controversial (Attou et al., 2024). However, this is not surprising because teachers' hesitation to use these subjects is known (British Council, 2009⁶; Kaplan, 2019; Yoshihara, 2011). Despite the reluctance of the lecturers for the inclusion of some issues, students show more positive reactions to the issues, such as homophobia, philosophical approaches and gender equality (Bayraktar-Bozkır, 2021).

Similar to the findings of Ordem and Ulum (2021), the participants in this study also mentioned the context of the country and the existence of a strict curriculum as excuses for their neglect of global issues. It was seen that some participants were motivated to use them if the conditions were changed for them in their school and country. As emphasized by Atkinson (1997) and Şirin (2017), teachers may not feel ready and competent to discuss such issues critically in countries such as Türkiye. Therefore, professional training on including these issues appropriately and critically emerges as an immediate need (Yakovchuk, 2004).

How to Integrate Global Issues

The results show that there are differing opinions about how to incorporate global issues into English language instruction. A few lecturers encouraged students to engage closely with global concerns, demonstrating a commitment to critical pedagogy; others, on the other hand, tended to

⁶ British Council. (2009). Equal opportunity and diversity: The handbook for teachers of English. https://www.britishcouncil.org/sites/default/files/eod_handbook.pdf

approach them more superficially. Moreover, the educational level of participants seemed to influence how they incorporated global issues, with those holding graduate degrees more likely to engage with global concerns critically. Such shallow involvement reduces the possibility of transformative learning, often a result of curricular restrictions or lecturers' hesitation to tackle controversial subjects (Kaplan, 2019). Negotiated syllabi through student engagement could be a solution to deal with complex issues in EFL classes as suggested by Essabari and Hiba (2025) because their study revealed that when given the autonomy to shape classroom discussions, students were more likely to critically engage with global challenges and teachers were able to move beyond superficial treatment of topics.

Critical pedagogy emphasizes empowering students to challenge societal beliefs and systems, fostering critical engagement with global issues (Freire, 2005). In line with this framework, the findings of this study suggest that while some lecturers are committed to critical pedagogy, others hesitate to fully integrate global issues into their teaching. The global issues covered in class were frequently presented in a way that precluded critical engagement with underlying power dynamics, which served to reinforce rather than to challenge the current quo. Similarly, Ordem and Ulum (2021) found in their study that only some participants had knowledge of concepts such as critical pedagogy and participatory approach, which led to the inclusion of global issues at a superficial level in classes because the participants in their study opted for a superficial overview of sociocultural issues by including soft issues that would not cause disagreement in class.

The fact that the lecturers' interest and experience were important in choosing their favorite global issues is an appropriate stance considering that the lecturer's expertise is vital while discussing global issues; otherwise, conflicts could become inevitable in a class environment. The need for a teacher to have good knowledge of a global problem is also explained in other studies (Dimici & Başbay, 2021; Pratama & Yuliati, 2016). The choice of a global issue was also related to the coursebook used, as confirmed by other studies (Ordem & Ulum, 2021). Participants demonstrated an understanding of global issues, aligning with findings by Akbana and Yavuz (2020).

The methods used by the participants to integrate global issues mainly included using discussion, using these topics as a warm-up for classes, or designing a lesson based on a global issue from scratch. Akbana and Yavuz (2020) also explained that their participants used these issues in their classes as pre- or post-activity to raise awareness. Some lec-

turers stated that they used questioning techniques to understand the hidden messages and different perspectives as mentioned by Bozkurt and Topkaya (2023). While there were some good examples, most participants lacked a systematic approach, and a critical perspective was seldom observed in their handling of global issues, which is similar to what Akbana and Yavuz (2020) reached in their study. Starting discussions with local issues before expanding to global contexts can make global issues more relatable for students. By drawing connections between local and global challenges, teachers can help students understand the interconnectedness of the world's problems.

Challenges in Addressing Global Issues

The finding showing that English teachers' capacity to properly incorporate global themes is hampered by Türkiye's exam-driven curriculum is experienced by similar educational institutions around the world. Teachers' flexibility is frequently restricted in nations with strict curricula, which might hinder pupils' ability to engage effectively with global issues (Erfani, 2012; British Council, 2009⁷). Similar findings were reported by Al-Jarf (2022), who found that EFL instructors often avoid global themes due to a lack of institutional guidance and training. These obstacles highlight the necessity of flexible, content-rich curricula and professional development to empower teachers to cultivate students' global citizenship and critical thinking abilities (Cates, 2005; Bozkurt & Topkaya, 2023). By putting these strategies into practice more widely, foreign language instruction can become a more effective means of fostering global awareness by better preparing students to handle and respond to transnational issues (Omidvar & Sukumar, 2013).

The existence of a strict curriculum, a global coursebook, and a standardized assessment system caused participants to follow the main material and use global issues if coursebooks included them. Similarly, Akbana and Yavuz (2020) and Çavdar (2006) also found that most teachers follow course-dependent methods because of the need to stick to the curriculum. This dependence often causes them not to integrate global issues in EFL classes (Al-Jarf, 2022). However, considering that many textbooks avoid controversial topics (Ahmed, 2022; Ordem & Ulum, 2021), this might result in a lack of understanding of global issues in a critical way. Banks (2010) also states that when diversity is superficially added to the curriculum, such as mere content addition, this might cause some misunderstandings in the classroom and suggests using transformative and action-based methods. The need to integrate global issues into the whole curriculum rather than just adding content is also highlighted by Başarır and Sarı (2022).

⁷ British Council. (2009). *Equal opportunity and diversity: The handbook for teachers of English*. https://www.britishcouncil.org/sites/default/files/eod_handbook.pdf

Given the limitations of standardized coursebooks, it is important to allow flexibility in how these materials are used. By adapting coursebook content and supplementing it with additional resources, teachers can create opportunities for deeper discussions on global issues. Kumaravadivelu (2003) argues that educators should exercise autonomy in their classrooms to design materials that are contextually and culturally relevant, as this enhances students' engagement with critical global topics.

Language was also claimed to be a barrier to discussing some issues. Some lecturers preferred to use global issues at only upper language proficiency, whereas some lecturers favoured using effective strategies at every level. Language competence as a favored criterion while selecting global issues is also addressed by Yakovchuk (2004) and Akbana and Yavuz (2020). However, the fact that lower language proficiency could also be used to discuss global issues is asserted by a few participants. Likewise, Erfani (2012) and Yamashiro (1996) suggest that global issues could be employed in every language.

Independent of language proficiency, the preparedness of students to discuss these issues in the classroom might be a problem in any case. Ordem and Ulum (2021) and Başarır and Sarı (2022) also support this result, stating that schooling experience until university may not have allowed students to share opinions on sociocultural issues. Translanguaging, the use of multiple languages in the classroom, offers a valuable strategy for reducing linguistic barriers when discussing global issues. By allowing students to express themselves in both their native language and the target language, teachers can create an inclusive environment that fosters participation (Garcia & Wei, 2014).

Cultural diversity in class was usually effective while using global issues since the discussion around these topics was enriched. Nevertheless, the possibility of a conflict over these issues in a culturally diverse classroom was also mentioned by some lecturers (Gürsoy & Sağlam, 2011). Since the participants mentioned some sensitivity and chaos that could arise in the classroom, they preferred to avoid some issues, which led them to exploit the international coursebook more because it was called safe (Ordem & Ulum, 2021). This possibility signals the necessity to carefully design the integration of global issues into language education (Başarır & Sarı, 2022).

Some attempts of a few lecturers in this study to critically include global issues in their lessons emerge as promising results, and their reasons for being independent and using recent and updated materials align with the results of Akbana and Yavuz (2020). However, these attempts by some teachers cause more workload for them because of the lack of easy access to materials, as mentioned in their explanations (Muhaimin, 2014). Fortunately, as Pratama and Yuliati (2016)

stated, some coursebooks are showing an effort to include global issues in recent years; therefore, when choosing the coursebook, this could be a criterion for lecturers.

CONCLUSION

The current study provided valuable insights into English lecturers' perspectives on integrating global issues into English language teaching. While most participants showed a willingness to include these topics, barriers such as curricular constraints, lack of training, and concerns over controversy limited their effectiveness. Some participants employed critical pedagogical approaches, yet a systematic, well-supported framework for integrating global issues remained lacking.

The theoretical framework of this study is grounded in critical pedagogy and critical theory, both of which emphasize the role of education in challenging societal power structures. By incorporating global issues into language lessons, lecturers not only enhanced students' language proficiency but also promoted critical consciousness. While some lecturers demonstrated an awareness of the transformative potential of global issues in the classroom, the overall lack of a systematic approach to incorporating these topics critically suggests that more professional development is needed.

For global education to be truly effective, English language lecturers must move beyond merely mentioning global issues and instead integrate them in ways that encourage critical thinking and action. Lecturers play a pivotal role as agents of change within the classroom, especially when addressing global issues. By fostering critical thinking and encouraging students to engage with global challenges, lecturers can help shape socially responsible and globally conscious citizens. One way to support lecturers in integrating global issues into their lessons is through the establishment of professional learning communities (PLCs). These communities provide a platform for educators to collaborate, share resources, and develop personalized materials. Therefore, organizing professional development training on the use of global issues in English teaching is essential for English lecturers, and global issues need to take place in foreign language teaching at every step, from curriculum design to assessment.

The key considerations for language teachers could be to be aware of the context of the workplace and the country they live in while determining the topics, using local examples or materials to discuss global issues in order to make the learning process meaningful for students, increasing their expertise on specific global topics, managing the classroom in an equal, and careful manner, making negotiations with the students at the beginning of term on which topics to include and determining some rules while discussing these

issues such as not using discriminative statements and respecting the opinions of others.

Since this study is limited to data from 13 lecturers from a specific city, it could be suggested that interested researchers conduct similar studies with different participants in different settings. In this way, the understanding of the infusion of global issues in language education and the proper methods for this could be revealed. Moreover, the study relied on self-reported data from lecturers, which may not fully capture their actual classroom practices, therefore future research including classroom observations or student perspectives could provide a more comprehensive understanding. Finally, the current study focused on lecturers' perspectives, therefore, future research could evaluate the effectiveness of different pedagogical strategies in enhancing students' critical engagement with global issues.

DISCLAIMER

This manuscript was refined using AI-assisted tools, specifically Grammarly and ChatGPT, to improve language clarity and coherence. AI was primarily used for language editing and for incorporating reviewer feedback, particularly in integrating critical theory with the study's scope. However, all conceptual arguments, analyses, and interpretations were developed independently by the author and critically reviewed to ensure originality and scholarly integrity.

DECLARATION OF COMPETING INTEREST

None declared.

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The Impact of Extreme Situations on Students with Dyslexia: Lessons from the Pandemic

Ana Isabel González Contreras ¹, David Pérez Jorge ², Elena Honorio González ¹, Isabel Alonso Rodríguez ²

¹ University of Extremadura, Badajoz, Spain

² University of La Laguna, La Laguna, Spain

ABSTRACT

Background: The state of emergency triggered by Covid-19 has significantly impacted various sectors, with education being one of the most affected. This qualitative study explores the psychosocial and educational repercussions for students with Specific Learning Difficulties (SLD), focusing mainly on those with dyslexia and their families. That is, understand how dyslexic students and their families have experienced their confinement and what psychosocial and educational consequences have derived from this situation.

Purpose: To investigate the Covid-19 impact on dyslexic students, identifying specific challenges to improve support strategies.

Method: In collaboration with the Extremadura Dyslexia Association (EXADIS) and the Spanish Dyslexia Federation (FEDIS), we developed a 20-item questionnaire to assess perceptions, experiences, and challenges during lockdown. Nineteen families participated, providing relevant data.

Results: Students with dyslexia experienced an overload of tasks and significant difficulties in understanding content, which increased their levels of stress and anxiety. Concurrently, positive aspects were identified, such as the strengthening of family bonds and improvement in the quality of shared time. However, the teaching staff detected a lack of coordination in the implementation of curricular adaptations and the appropriate follow-up for these students.

Conclusion: These results underline the need for more effective pedagogical strategies and coordinated support to address the educational needs of students with dyslexia in crises.

KEYWORDS

Dyslexia, Covid-19 Impact, Remote Learning Adaptations, Psychosocial Effects, Educational Challenges

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Correspondence:
David Pérez Jorge,
dpjorge@ull.edu.es

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INTRODUCTION

The declaration of the COVID-19 pandemic by the World Health Organization (WHO) in March 2020 triggered a series of preventive measures that significantly transformed various sectors, including social, political, economic, and educational realms (Basta et al., 2021). In education, these measures led to the transition from face-to-face teaching to remote learning to mitigate the pan-

demic's effects (Averett 2021; Porter et al., 2021), profoundly affecting millions of students and their families worldwide¹.

One year into the pandemic, studies began to investigate the indirect effects of the extended school closures on students, covering aspects of learning and physical and mental health². The pandemic's impact was uneven among students, with the loss of learning being particularly complex for those from dis-

¹ UNESCO. (2020). Global education monitoring report, 2020: Inclusion and education: All means all. UNESCO, 512. <https://unesdoc.unesco.org/ark:/48223/pf0000373718>

² Schleicher, A. (2020). The impact of Covid-19 on education. Insights from education at a glance 2020. OECD.



advantaged and minority backgrounds, leading to a higher risk of exacerbated educational disparities. Recent research has highlighted pre-existing educational issues and exposed the inequalities affecting the most vulnerable students (Agostinelli et al., 2020; Colombo & Santagati, 2022; Kuhfeld et al., 2020).

By 2021, with nearly half the world's student population affected by partial or complete school closures, the global impact of these shutdowns became apparent in society³, significantly widening educational outcome disparities and revealing cracks in the existing support structures (Whitley et al., 2021). Questions emerged regarding the legal framework concerning school inclusion and the measures taken to ensure the right to education during school closures and restrictions (Colombo & Santagati, 2022). Despite attempts to mitigate knowledge loss, longstanding technological, economic, and educational disparities facing society's most disadvantaged educational populations came to light (Andrew et al., 2020). The sudden onset of the pandemic forced families, students, and educators to adapt to a new educational reality marked by unforeseen challenges and an ever-evolving learning environment, posing significant challenges that affected not only global educational practices (Chrzanowska, 2022) but also the emotional and psychological well-being of the majority of students, particularly those most vulnerable.

This situation's emotional, psychosocial, and educational consequences were varied and substantial, notably affecting students with Specific Learning Difficulties (SLD) and their families (Ghosh et al., 2020). The absence of studies on the long-term consequences of confinement during the COVID-19 pandemic, especially regarding the return to the school environment and normal social interactions, underscores the need to explore the specific psychosocial and educational repercussions experienced by students during this crisis, with a particular focus on those with dyslexia and their families (Álvarez, 2020). In addition to the impact that confinement has had on children in their academic performance, as we can see in the Arteaga-Hernández et al. (2024) where it shows the decrease in academic performance, especially among younger students and those with special educational needs.

The research hypothesizes that, although students without specific learning disabilities (SLD) and their families may encounter similar challenges, the psychosocial and educational impacts will manifest differently for students with dyslexia. This assumption is grounded in a thorough examination of the unique experiences associated with dyslexia, aiming to enhance understanding of these distinct dynamics and to inform the development of more targeted and effective interventions.

THEORETICAL BACKGROUND

Definition of Dislexia

Dyslexia has a broad etiology and has evolved over the years. The International Federation of Neurology gave its first definition in the 1980s. It was understood as a disorder manifested in difficulty learning to read despite conventional instruction, adequate intelligence, and opportunities (Samaniego & Luna, 2020). Subsequently, in 2002, the 'International Dyslexia Association' (IDA), now known as 'Annals of Dyslexia,' recognized it as a specific learning disorder resulting from a neurodevelopmental disorder characterized by difficulties in the accuracy and fluency of recognizing written words as well as problems in decoding and spelling (Cuetos et al., 2019). It was then included in the Diagnostic and Statistical Manual of Mental Disorders (DSM-V, 2014) within Neurodevelopmental Disorders, specifically as a Specific Learning Disorder, conceptualized as 'an alternative term used to refer to a pattern of learning difficulties characterized by problems with accurate or fluent word recognition, poor spelling, and poor writing ability' (DSM-V, 2014, p. 64). Currently, as Cuetos et al. (2019) comment, considering the various studies related to dyslexia in recent years, we can see that the alterations that prevent these children from learning to read correctly are not visual or auditory, but the deficit is primarily phonological, encompassing three components: phonological awareness, understood as the ability to perceive and manipulate speech sounds; short-term verbal memory or the ability to retain verbal stimuli; and rapid naming, which is the ability to quickly and automatically retrieve visual stimuli. In this same conceptual line on dyslexia and based on the interest in its early detection, new instruments were developed such as DIX (Dyslexia Detection Battery) of Ramos et al. (2019) and CFD 14 (Family Questionnaire for the detection of literacy and dyslexia risks in early childhood and primary education) of (González-Contreras et al. (2024).

Covid and Pandemic

With a clear understanding of the concept of dyslexia, we must place ourselves in the moment the study was conducted, the end of 2019, during the Covid-19 pandemic lockdown. The state of emergency transitioned education from face-to-face to online, leading to educational issues reflected in the content children could not receive. This gap in access to digital resources and the lack of face-to-face support exacerbated the learning challenges for students with special educational needs. Studies have highlighted the significant inequalities experienced by students during the pandemic, particularly those with disabilities, as they faced limited access to the technology and support needed for effective

³ UNESCO. (2021). One year into Covid: Prioritizing education recovery to avoid a generational catastrophe. <https://unesdoc.unesco.org/ark:/48223/pf0000376984>

learning⁴ (Patel, 2020). These challenges underscore the need for more robust digital infrastructure and inclusive educational practices during emergency situations. Students with difficulties accessing resources and means for online education and those with learning difficulties were particularly affected (Gayatri, 2020; Jiménez, 2020).

The Role of Families and Teachers During Confinement

Regarding dyslexia and attention to diversity during confinement, Gómez et al. (2020) stated that confinement had a significant impact, increasing inequality among students, especially those with SLD, whose individualized intervention and attention were halted by the lack of face-to-face interaction, conditioning the quality of the educational response.

The migration from the face-to-face teaching model to the online model required significant efforts and involvement from parents and a considerable capacity for teacher adaptation (Pérez-Jorge et al., 2020). For their part, parents have served as a support to mitigate the effects of isolation and a lack of face-to-face support, being a fundamental complement to teachers. As Menéndez and Figares (2020) express, the migration from the face-to-face teaching model to the online model required significant efforts and involvement from parents and a considerable capacity for teacher adaptation (Pérez-Jorge et al., 2020). For their part, parents have served as a support to mitigate the effects of isolation and a lack of face-to-face support, being a fundamental complement to teachers.

Regarding the role of teachers during confinement, we want to highlight the importance they have had in assuming the role of distance educator and adapting to the new situation. Their role has not only consisted of providing educational and didactic materials to children and being in continuous contact with parents to monitor the evolution of their students, but they have also had to offer the opportunity for mutual interaction and the possibility of advice and support.

On the other hand, consideration also had to be given to adapting learning materials for students with difficulties, bearing in mind that many students did not have electronic devices to work remotely. In this new situation, teachers, with countless difficulties, had to provide inclusive education adapted to the exceptional needs arising from the pandemic (Cifuentes, 2020). Regarding this issue, according to Méndez and Figares (2020), we find a scenario in which educational interventions have been less effective, due to the virtuality and distance imposed by the teaching model, which has hindered the development of the emotional bond, thus significantly affecting the developmental progress of students. Teachers had difficulty directly observing

task performance and providing appropriate feedback to students. In addition, in terms of communication barriers with families, these increased due to the need for increased asynchronous and deferred communication. Teachers had to explain via email the objectives and tasks, a fact that conditioned the feedback, generating uncomfortable situations for family members who were not comfortable with the deferred communication models. This fact affected parents' work with SEN students, as many of the specific contents were difficult for parents to access.

The Role of New Technologies in Confinement

The new information and communication technologies (ICT) have played a fundamental role during confinement, supporting students and teachers in maintaining contact and interacting through virtual classrooms. Among the digital tools that educational institutions had to use our platforms and institutional, educational tools related to the public or private sector (Rayuela, EducaMadrid, Séneca), social networks and communication tools (WhatsApp), tools to create and share content (Prezi, Classroom), and interactive tools for daily work (Microsoft package) (González-Afonso et al., 2023; Pérez-Jorge et al., 2023).

Moreover, taking into account the socioeconomic level of families and the difficulties for those less advantaged students, Fernández Enguita (2020) explains that during the pandemic, three gaps were identified in the Spanish education system: firstly, an access gap understood as having or not having access/connection to technological devices, which highlighted the lack of devices in homes (Briesch et al., 2021; Pérez-Jorge et al., 2020). Subsequently, the gap related to the use and quality of these showed that not all students were familiar with the use of technology (González-Afonso et al., 2023; Pérez-Jorge, 2023; Rodríguez-Jiménez et al., 2023). Finally, the educational gap is related to the ability of educational centers and teachers to face the new modality of distance education, that is, whether they have the resources and whether teachers have sufficient competencies to face the new modality of digital education (COTEC, 2020)

Numerous studies have explored the psychosocial and educational impact of the pandemic on students and families. Álvarez (2020) and Menéndez and Figares (2020) highlight the challenges students face in adapting to online learning and the added burden on families and educators during this period. The lack of appropriate accommodations and support mechanisms (Gómez et al., 2020; Rodríguez, 2020) for learners with SEN and dyslexia has been documented. There is a significant gap in the literature regarding how these challenges specifically impacted students with dyslexia and their families during confinement. While previous research refers to the general difficulties faced by students

⁴ Burgess, S., & Sievertsen, H. H. (2020). Schools, skills, and learning: The impact of COVID-19 on education. *VoxEu CEPR Policy Portal*. <https://voxeu.org/article/impact-covid-19-education>

with SEN, few studies are focusing on the experiences of students with dyslexia in the Spanish context during the pandemic. This study addresses this gap by examining the psychosocial and educational implications for students with dyslexia and their families.

Through this study, we aim to assess the impact of the pandemic on the learning of SLD students and understand the role of families and teachers during confinement.

METHOD

Background

The questionnaire was meticulously designed to facilitate an in-depth examination of the experiences of families with children diagnosed with dyslexia during the unique circumstances of the Covid-19 lockdown. Particular emphasis was placed on key areas such as the management of home-based learning, the specific challenges encountered by students with dyslexia in a remote learning environment, and the psychosocial effects of prolonged confinement on both the students and their families.

Google Forms was selected as the survey distribution tool due to its high accessibility, user-friendly interface, and ability to reach a broad audience. This platform enabled efficient data collection, ensuring comprehensive and meaningful responses from the targeted population.

Given the exceptional conditions under which the study was conducted, methodological options were necessarily limited. As a result, a qualitative, descriptive, and exploratory research design was adopted. The survey, administered via Google Forms, was developed to capture detailed insights into the perceptions, emotional responses, and challenges experienced by students with dyslexia and their families during the lockdown period.

Sample

To obtain a sample of students with dyslexia and their families in the region of Extremadura, we established a collaboration with the Dyslexia Association of Extremadura (EXADIS). This association played a crucial role in distributing the survey, using email to contact a wide range of families, thereby facilitating the collection of many survey responses. In parallel, to ensure the representativeness of the sample, we partnered with the Spanish Dyslexia Federation (FEDIS), employing a similar strategy.

The final sample consisted of 19 children and their families. The group included 7 girls and 12 boys, aged between 8 and

17. These students were enrolled in various educational levels, ranging from the third year of Primary Education to the Baccalaureate, which allowed for a diverse and representative view of educational experiences during the lockdown.

This sample selection methodology was designed with the goal of obtaining a comprehensive and representative view of the experiences lived by the studied group, thereby ensuring the relevance and applicability of the study's findings.

Instrument

In response to the restrictions imposed by the state of emergency, an electronic form with open-ended questions was chosen as the most effective means of collecting information. The survey, administered via Google Forms, consisted of 23 items. Of these, 11 focused on the student's well-being, school organization and difficulties, teacher interaction and performance, family relationships, home organization, and potential personal and family benefits derived from the lockdown. The remaining 12 items were directed at parents or legal guardians, exploring similar themes to obtain a comparative view and understand the perceived changes in their children, as well as to evaluate the educational response of the schools and teachers during the confinement period (Appendix 1).

To ensure the validity of the questionnaire content, it was subjected to an evaluation by three expert judges in the field. This process allowed for the refinement of the instrument, eliminating or modifying redundant or inappropriate items, leading to the final version of the survey. Additionally, a pilot study was conducted with 5 students and 4 family members, which helped to determine the final suitability of the assessment tools and to make necessary adjustments to overcome any difficulties in their administration.

Procedure

The procedure for implementing the form was carried out in close collaboration with the Spanish Dyslexia Federation (FEDIS)⁵ and the Dyslexia Association of Extremadura (EXADIS)⁶. These associations facilitated the distribution of the questionnaire to families with children diagnosed with dyslexia.

The survey was available from March to June 2020, coinciding with the confinement period. This time interval allowed families to participate without pressure, increasing the likelihood of greater participation and quality responses.

After the data collection period closed, the data from the Google Forms were exported to an Excel spreadsheet for analysis. Additionally, the commitment to share the results

⁵ Web FEDIS: <https://fedis.org/>

⁶ Web EXADIS: <http://www.dislexiaextremadura.org/> - https://www.facebook.com/dislexiaextremadura/?locale=es_ES

and conclusions with the participants and collaborating associations was reiterated, maintaining an approach of transparency and feedback in the research.

Data Analysis

To analyze the qualitative data obtained from the open-ended responses of students with dyslexia and their families, we employed content analysis, a systematic method that facilitates the identification, categorization, and interpretation of recurring themes within qualitative data. The analysis process began with an initial familiarization phase, during which the researchers thoroughly reviewed the responses to gain a comprehensive understanding of the data.

Subsequently, a coding process was implemented to identify key phrases, concepts, and ideas relevant to the participants' psychosocial and educational experiences during the lockdown. These codes were then organized into broader thematic categories, reflecting the core challenges and issues faced by the participants. The categories were carefully interpreted in alignment with the study's objectives to ensure consistency with the research questions and to enhance the validity of the findings.

Differentiation between the responses of students (boys and girls) and those of their parents or guardians was a critical component of the analysis. This approach allowed for a comparative examination of the distinct perspectives, providing a more nuanced understanding of the lived experiences during the lockdown.

To enrich the qualitative analysis and provide a more personal dimension to the data, significant testimonials from both students and their family members were selected for inclusion in the results. For clarity and confidentiality, each testimonial is identified using a specific coding system:

- The letter 'A' denotes responses from students (e.g., A3 indicates the third student respondent),
- The letter 'F' represents responses from family members (e.g., F5 indicates the fifth family respondent),
- The code 'n' corresponds to the assigned participant number within each group.

This coding system not only facilitates the clear identification of data sources but also ensures the anonymity and confidentiality of participants, in strict adherence to ethical research standards.

Ethical Considerations

Prior to the commencement of data collection, all procedures were conducted in full compliance with relevant data protection regulations and ethical research standards. Participants were provided with detailed information regarding

the nature, objectives, and significance of the study to ensure their clear understanding of its purpose.

Informed consent was obtained from all participants, with assurances that their participation was voluntary and that they could withdraw from the study at any stage without any consequences. To safeguard participants' privacy, strict measures were implemented to ensure the confidentiality and anonymity of all collected data.

Participants were explicitly informed that their responses would be handled with the utmost discretion and used solely for research purposes. These ethical safeguards were designed to foster an environment that encouraged honest and authentic responses, thereby enhancing the reliability and integrity of the data.

RESULTS

The study's findings are organized into three main sections to provide a comprehensive understanding of the experiences of students with dyslexia and their families during the lockdown period: the emotional and psychosocial situation, organisation and difficulties in the school environment, and the parent-child relationship.

Emotional and Psychosocial Situation

On an emotional level, among primary school students, 57.8% expressed feeling calm and comfortable at home during the lockdown. Examples of their comments include: "Happy" (A1), "Glad not to go to school" (A2), "Fine" (A4). A 10.5% of the students noted relief at not feeling observed by their peers, as indicated by "Being able to have telework where I don't see how others do things quickly and it takes me time to start" (A3). On the other hand, 15.7% of secondary school students reported feeling distressed and stressed, a feeling that intensifies in baccalaureate due to the uncertainty of the EBAU: "With anxiety and nerves because of the uncertainty of the EBAU and the number of channels my teachers use to communicate with me" (A12). Additionally, 26.3% of the children expressed feelings of sadness and fear: "Sad" (A6), "Not being able to go out on the street, hug and kiss" (A11); "Because I can't see my friends and I'm afraid this will last forever" (A18).

From the families' perspective, 36.8% perceived their children as emotionally positive, admiring their adaptability: "She is getting through the lockdown very well, I think it has not affected her, she has adapted" (F4); "I find him very calm, extremely tidy and organized" (F19). However, another 36.8% observed nervousness and anxiety: "Very nervous and anxious" (F10), "Gets overwhelmed and quits things very often" (F7), "Stressed" (F13), "More irritable" (F6). A 26.3% noticed behavioral changes: "There are good times and bad times" (F8), "Quite moody" (F14), "Moments of ev-

everything, very affectionate and occasionally very frustrated" (F18), "Depending on the days, often very sensitive, crying and getting angry over any little thing. Sometimes overwhelmed too" (F17).

Regarding the psychosocial state, 52.6% of the children showed boredom and lack of social contact. A 42.1% spent time on leisure activities and reflecting on the importance of relationships and solidarity: "The importance of solidarity" (A14), "I am seeing things from another perspective, I have more time to reflect" (A17). The parents reflected concern for others and greater expression of affection: "He cares a lot about how the people around him feel" (F6) and "Misses his friends a lot" (A5). Many students expressed frustration with the inability to socialize, leading to isolation and boredom. For example, one student shared: "I couldn't see my friends or talk to them like before, and that made me feel lonely" (A6). Another student commented: "I felt bored all the time. There was nothing to do, and I missed playing with my friends" (A3).

Although the lockdown improved the emotional state and some school aspects for many students with dyslexia, it also presented unique challenges given their condition.

Organization and Difficulties in the School Environment

Changes in the Educational Dynamics of Students and Parents

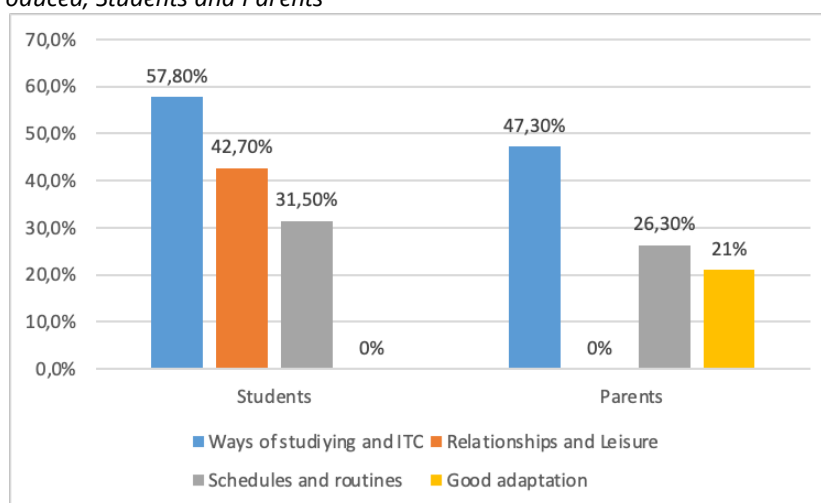
The main changes that the students had to make were based on three key aspects (Figure 1): the continuous use of new technologies and the shift in study and learning modes, with a higher percentage of 57.8%: "The change from face-to-face classes to video calls with teachers, the fact of doing

tasks through computer programs and uploading them to different platforms" (A12), "Studying with the mobile and the computer. Making video calls with the teachers" (A6), "Working more with the computer" (A9), "Classes on video calls" (A11). The change in leisure relationships was observed in 42.7%: "Meetings with friends through video calls" (A2), "Not being able to go out on the street, hug and kiss" (A5), "Not being with friends" (A13), "Not being able to see my friends" (A4). Changes in daily routines and schedules were also mentioned, with 31.5%: "Spending many more hours working" (A8), "changes in schedules and routines" (A14), "I don't have school routines because each teacher does something different. And every day is different in terms of schedules" (A12).

In question 13 (Explain what your child has had to change to adapt to the new situation. Please describe how you perceive your child emotionally during confinement (how it affects him/her, changes you observe, etc.), family members responded similarly to their children (Figure 1); regarding schedules and routines, 26.3% of the parents stated that some of the changes during the lockdown corresponded to the rhythm of each day's time: "She has had to change routines a bit" (F17), "We have changed schedules, they get up later and also go to bed later" (F9). Secondly, another 26.3% claim that the changes have occurred predominantly in terms of learning and the use of ICT: "She watches more videos and uses the computer more" (F6), "Adapting to computer media and learning ICT issues that she didn't know" (F15), and lastly, 21% of the families note that they have had to change the way of learning: "The way of learning has changed" (F17), "Mainly the way of learning" (F10). In addition, 21% of parents have stated that their children have not had to make many changes in school organisation and have had good adaptation: "He has adapted very well from the first day" (F3), "I have not noticed hardly any changes, to be honest" (F1).

Figure 1

Results of the Changes Produced, Students and Parents



Difficulties

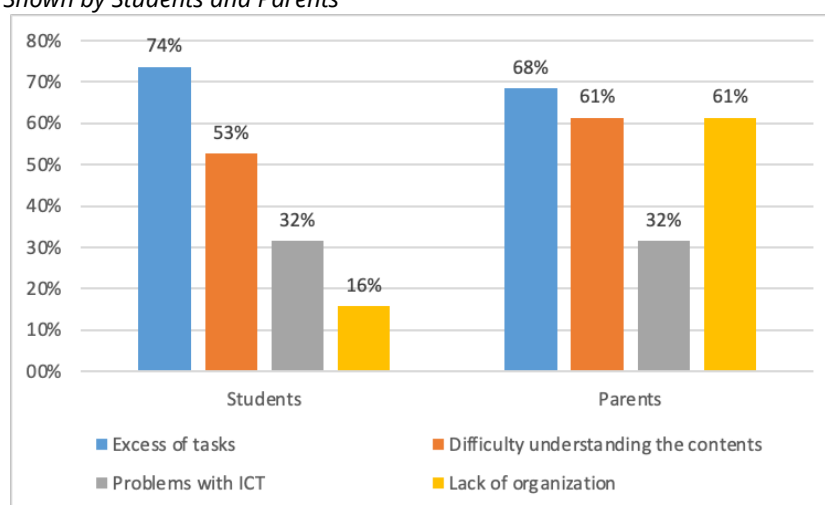
Regarding question 3 (explain what your child has had to change to adapt to the new situation. Please describe how you perceive your child emotionally during confinement (how it affects him/her, changes you observe, etc.), it was observed that 52.6% (Figure 2) of the students confirmed difficulty in understanding and developing the proposed tasks, claiming that they did not adapt to their situation and the lack of explanations: "I struggle to understand the tasks without explanation, my mother helps me, but it's not the same" (A5), "That many things if I do not understand I have to ask, wait for the answer and be lucky to understand it" (A18), "A lot of homework in which my parents and my sister have to help me because many tasks are difficult for me to understand" (A2). 31.5% reported problems with digital platforms, noting that they have struggled to organise due to the different types of platforms and their functionality: "I forget tasks because I have to look in several places: school page, Aules, email, WhatsApp, etc." (A1), "I have problems organising myself, as I receive tasks from four different social networks" (A6), "It was a mess with the platforms and with the homework and video calls" (A15). In addition, 15.7% of the sample agreed on the problem of not having several devices to simultaneously perform school tasks or the professional work of parents, and therefore must share the family computer: "I get ahead with those that don't need a computer because it is my older brother's turn (we only have one)..." (A4), "I get up, have breakfast and at 11 I get on the computer because my sister uses it from 10 to 11" (A16). Furthermore, it was estimated that the lack of organisational ability was one of the difficulties present in 15.7% of the students: "They have to organise it for me" (A19), "I have problems organising myself" (A7), "There are many homework assignments, and they pile up. My mother organises it for me." (A12).

From the families' perspective (question 14) that we can show in Figure 2, it was observed that the respective percentages of each of the difficulties they have found in their children were close to those obtained by the students themselves, specifically, 63.1% of the families claimed that the biggest difficulties were in terms of the children's inability to understand the contents and develop some of the proposed activities, as well as the difficulty in organising themselves: "By herself she is not able to read and do the tasks without me being on top of it. She misses knowledge of vocabulary and understanding about what is asked of her." (F1), "He is not able to organise himself alone because he finds many activities in the classroom and gets overwhelmed." (F12), "There are teachers whose emails are not clear or orderly instructions, so he doesn't know what he has to do" (F8). At least 31.5% had difficulties with ICT, since the students were not very familiar with all the applications and platforms: "All of them, she is not capable by herself. First, the lack of knowledge in handling the computer and the platform." (F3), "In addition to working with applications in which I do not think any child knows how to manage alone." (F11).

Following the line of difficulties in the proposed tasks (question 4), most of the answers were associated with the excess of homework, students felt overwhelmed during the lockdown and showed a sense of being overburden trying to cover all the content and deliver everything on time: "Time passes and I do not have time" (A2), "For having many emails with a lot of information and video calls" (A11), "Because I don't have time" (A8), "There is no time for anything, and I am 12 years old" (A13), "When they send me more problems or activities than they send in physical classes" (A16), "Because they send me many things and sometimes I don't understand them." (A19), "Because they sent many tasks, then less and now again more" (A9), "They send many tasks." (A15), "There are many homework assignments and

Figure 2

Results of the Difficulties Shown by Students and Parents



they pile up" (A10). This feeling of overwhelm and overburden by the amount of tasks and the sensation of drowning for not being able to deliver on time represented 73.6% of the students with dyslexia.

Attention to Diversity

Concerning attention to diversity, specifically in response to question 20, it was observed that 63.1% of the evaluated families expressed dissatisfaction with the adopted measures, qualifying them as inadequate or non-existent. The testimonies provided by the participants reflected a general perception that the individual needs of their sons and daughters "are not taken into account" (F2). The parents' concerns became evident, as expressed in their comments, such as "With much sorrow, to see that it is not being attended to as it really needs. They only consider making her a minimum, but I have to ask for explanations of work (...) there is a lack of closeness and much interest in how the student copes with it. Nobody from the center has called us to know how my daughter is handling the tasks. When I send an email complaining about something, sometimes they don't even answer me" (F8) and "Bad, it took a month and a half for the PT to contact my son; his tutor has also not mentioned any help, and no tasks have been facilitated..." (F3).

The families' concern about the limited preparation of the teaching staff to adapt to the circumstances, which led them to constantly negotiate with the tutors to achieve the adaptation of their children's tasks, was highlighted. This finding emphasizes the importance of teacher training in the context of responding to diversity, especially in the field of dyslexia, where the adaptation of methodology significantly affected this group of students.

Furthermore, both families and students with dyslexia presented suggestions through questions 10 and 21, focusing on the need to provide more didactic support material to facilitate the understanding and effective execution of tasks. These recommendations included the request for "everything to be sent explained with audio or video..." (A11) and "to send more videos explaining things" (A13). The importance of individualized adaptation of tasks was also emphasized, reflected in comments such as "That we are all different, some tasks are more difficult for some than for others. If possible, the tasks should be special for each one. And to reinforce what each one needs to review more" (A9) and "That they help us in adaptations in studies" (F15).

A significant portion of students emphasized the need for enhanced teacher training in information and communication technology (ICT) and better coordination among educators. Specifically, 68.4% of the students expressed their desire for teachers to receive more training in information and communication technology (ICT) and teacher coordination. Participants suggested improvements in the coordination of communication systems, tasks, and teaching methods,

with comments such as «I would tell them to coordinate and unify criteria regarding communication systems, tasks, and ways of teaching» (A11) and «That they adapt to new technologies and offer classes through video calls and recorded classes that can be sent» (A16). The need to provide teachers with more training in telematic resources and ICT was also highlighted (A4).

Additionally, 21% of the families emphasised the importance of creativity in teaching and updating the use of ICT (Information and Communication Technologies). Opinions such as «More creativity, they are not creative at all, they seem like robots» (F4) and «It is imperative to adapt to current times, as these young people represent the future in a technological era. It is not viable to teach classes without making use of available technological resources. Continuous training is essential» (F18) were reflected.

Parent-Child Relationship and Family Organisation

During the lockdown period, the family became the fundamental pillar in the educational development of children. Parents took on the important responsibility of organising study time and providing support in school tasks, playing an active role as teachers for their own children. The students (68.4%, Figure 3) expressed this in question 6, highlighting the invaluable support of their parents. Examples of these expressions include: «My mother helps me a lot. She copies the agenda with tasks and video call times, also for exams. She wakes me up in the morning...» (A2), «My mother helps me to organise and explains social studies to me, makes diagrams on the board we have and explains the hours and records me reading» (A8), and «My family helps me in doing the tasks» (A4). Additionally, 47.9% of the participants emphasised the crucial role of parents in compensating for the physical absence of teachers, strengthening the relationship and communication between parents and children. Some responses included: «It hasn't changed» (A1), «No, because my mother has always helped me with studies and organisation» (A7), «The relationship has not changed. The only thing is that now we spend a lot of time doing things together» (A16), and «No, the relationship is the same and the habits are similar» (A19).

Family members agreed that the relationship with their sons and daughters improved during the lockdown, resulting in increased trust, communication, and the opportunity to spend more time together in family activities (63.1%). Examples of these perceptions included: «Closer relationship, more trust, he is calmer than when he goes to class and less irritable» (F3), «We are getting to know each other better» (F8), «He tells us when he feels bad, he is closer» (F5), and «The two sisters have started to share many games and their relationship has become much closer and they have many complicit moments together» (F9). According to parents, in 31.5% of cases, the relationship with their children

remained similar or the same as before the state of alarm. Some responses included: «Few changes, really» (F17), «My relationship has not changed» (F10), «It has not undergone changes» (F4), and «No, we have been very well» (F8).

Despite the difficulties faced by families and students with dyslexia during the lockdown, significant family benefits were identified. The responses provided by the children in question 8 revealed that one of the most significant benefits of the lockdown situation was quality time and the opportunity to enjoy family life, in addition to leisure time, as reflected in their responses corresponding to 84.2% of the students participating in the research (Figure 3): «I spend more time with my family and can play more» (A2), «I spend more time with my parents and play more with them» (A7), «I spend more time with my family and have a good time» (A9), «We all spend much more time together» (A12), and «Playing with my friends via video games, talking to them on WhatsApp and Skype, and spending more time with my parents» (A15). In addition, a small percentage (3 out of 19 students) expressed that one of the benefits of lockdown was the opportunity to carry out educational training at home.

Some responses included: «The issue of not having exams, learning without so many exams» (A1), «I am less stressed at home, I am safe» (A8), and «I have learned to handle the computer and its programs much better» (A13).

From the parents' perspective, it was observed that a large percentage (63.1%, Figure 4) highlighted the pandemic's main benefit as being able to spend more time with their children and enjoy family life. The responses to question 18 reflected these perceptions, with examples such as: «We spend more time together and argue much less» (F3), «We are happy doing things together» (F5), «We have more time to be together» (F12), and «I value very positively the fact of having been able to be with my children for so long» (F16). In addition, a small percentage (4 out of 19 families) highlighted that the pandemic allowed them to get to know their children better, discovering their personalities and needs. Some responses included: «It is helping me to better understand my daughter's deficiencies, the autonomy she can have» (F4), «We are getting to know each other better» (F7), and «Closer relationship, more trust, he is calmer than when he goes to class and less irritable» (F11).

Figure 3
Results of the Benefits of Confinement according to Children

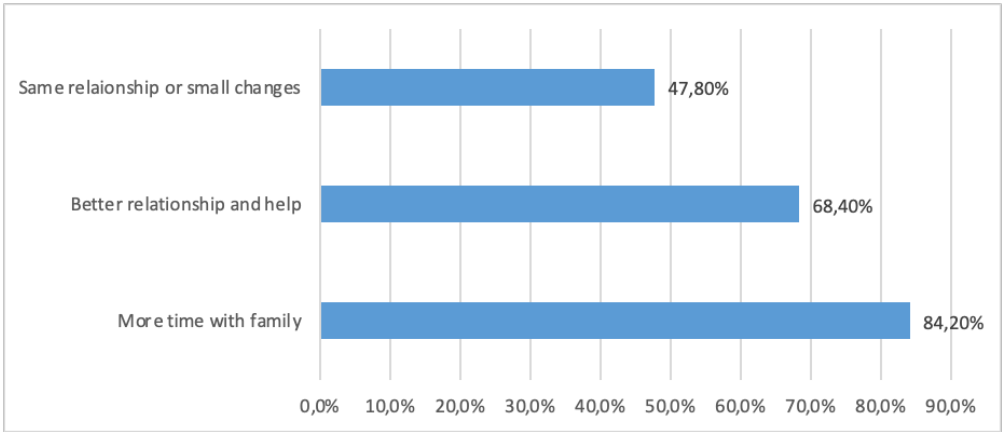
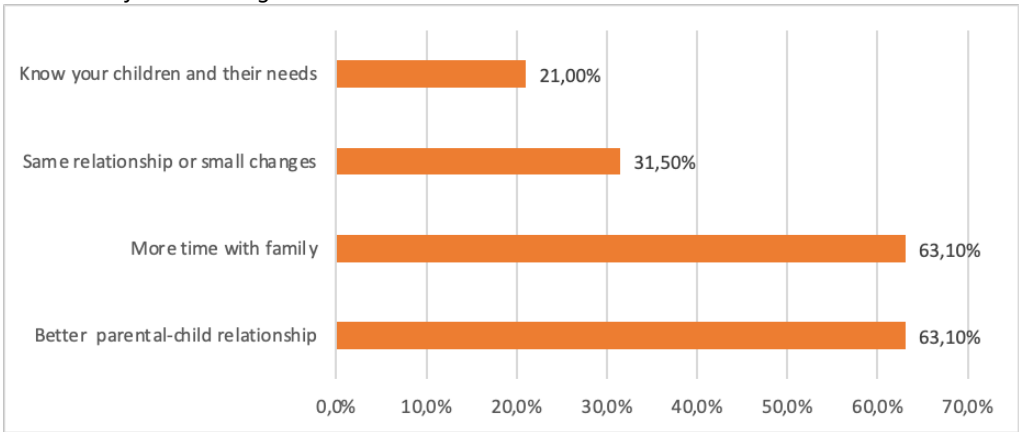


Figure 4
Results of Confinement Benefits According to Parents



DISCUSSION

Concerning the negative experiences of students with dyslexia and their families during the period of isolation and distance education, it is evident that several significant challenges stand out. One of the main challenges was the lack of empathy and appropriate adaptations by educational institutions. This finding aligns with research showing that the shift to digital learning environments disproportionately affected children with special educational needs (SEN). Many students and their families faced additional barriers, including limited access to devices and digital literacy, which hindered their ability to effectively engage with the educational content (Pérez-Jorge et al., 2024a; Pérez-Jorge et al., 2024b). Furthermore, the mental health toll caused by the lack of social interaction and physical activity during the pandemic was particularly pronounced among students with disabilities (Theis et al., 2021; Loades et al., 2020).

The results of this study reflect that a high percentage (31.5%) of students with dyslexia had difficulties adapting to educational content using information and communication technology (ICT). This coincides with previous findings (Forteza et al., 2021) that also highlighted problems in content adaptation and the lack of appropriate resources to address dyslexia-related difficulties (52.6%). Furthermore, 66.3% of the students stated that teachers did not adequately respond to the needs generated by the pandemic situation and felt that their specific implications in the context of dyslexia were not duly considered. This lack of adaptation and support from teachers may have contributed to the distress of students and their parents trying to provide support in the educational process (Chafouleas, & Iovino 2021; Houtrow et al., 2020). These findings are consistent with previous research suggesting that services for students with special educational needs decreased during the pandemic (Neece et al., 2020) and that necessary adaptations were not provided (Garbe et al., 2020).

The lack of competencies related to designing materials for virtual training was also highlighted as a significant challenge. Uncertainty about the teaching-learning model and the lack of knowledge about technological resources and applications for virtual training hindered communication between students, families, and teachers and limited the monitoring and evaluation process. This aspect underscores the need to adapt the training plans of future teachers, focusing on technological literacy and the design of appropriate pedagogical strategies for virtual environments (Picardo, 2020).

The study's results indicate an urgent need to improve attention to diversity in the educational field. These improvements should focus on training teaching staff, adapting methodology, effectively integrating ICT, and coordinating teachers, with the aim of creating a more inclusive and effective learning environment. As indicated in the study by Asbury et. al (2020), parents' suggestions regarding teach-

ers are to receive specialized professional advice for parents focused on how to meet the educational and mental health needs of their children; as well as establish appropriate tasks and resources for learning at home. In this sense, we also identify with the research by Parra et al. (2020) in which families of children with special educational needs state that they have encountered different difficulties related to the relationship and communication with non-face-to-face school, the demands (homework, tasks, content...) and with the demands and expectations. It is clear that these parents have felt a poor family-school relationship, so good coordination is necessary on future occasions.

The evidence collected in this study reflects the significant impact of the Covid-19 pandemic in the educational context, especially in the attention to students with special educational needs such as dyslexia. The limitations associated with the implementation of virtual education and the specific learning difficulties of students have compromised the educational process. However, in terms of shared time and coexistence, the perceived benefits in the family sphere played a fundamental role as emotional support and facilitated advances and achievements in learning. The family became an essential pillar that largely managed to compensate for the limitations derived from implementing the virtual education model, especially for students with dyslexia.

Online education has seen a significant increase in adoption, especially during the Covid-19 pandemic. However, for students with dyslexia, this transition to virtual environments has presented particular challenges. One key limitation is the lack of access to specialized resources and supports. Students with dyslexia often require specific adaptations, such as readable texts, visual aids, and read-aloud tools, which may not be readily available on online platforms. Additionally, the insufficient training of teachers in technology and pedagogy to meet the needs of students with dyslexia has been a major obstacle. Teacher training must be a priority to ensure that educators are prepared to provide an inclusive and effective learning environment.

During the lockdown, the family's role was crucial in supporting children's education, with parents actively participating as facilitators and educators. This led to stronger parent-child relationships, enhanced communication, and increased family bonding. Most families reported positive changes, with a greater understanding and closeness among family members. Despite challenges, especially for students with dyslexia, the situation highlighted the significant benefits of quality family time and the importance of adapting educational methods to support diverse learning needs.

Limitations

The study reflects limitations in online education for students with dyslexia during the COVID-19 pandemic, high-

lighting the lack of specialised resources and adequate support. Many students faced additional barriers such as limited access to devices and digital literacy, which hindered their effective engagement with educational content. In addition, insufficient teacher training in technology and pedagogy to address the specific needs of students with dyslexia represented a further barrier. This underlines the urgency of improving attention to diversity in the educational field by focusing efforts on teacher training, adaptation of methodologies, and effective integration of ICT.

CONCLUSION

The conclusions derived from this study highlight the importance of addressing the specific needs of students with dyslexia in the context of distance education during emergency situations, such as the Covid-19 pandemic. The results indicate that there were significant challenges in terms of adapting educational content, a lack of adequate support from teachers, and the need to improve training in technological competencies and pedagogical strategies for virtual environments. However, it is crucial to highlight that, despite these challenges, families played a vital role in the educational process of their children with dyslexia, providing emotional support and contributing to academic success. The shared time and coexistence within the family during lockdown were perceived as significant benefits that partly compensated for the limitations of the virtual education model.

These findings underline the importance of designing specific strategies to cater to the diversity of students, especially those with special educational needs, in distance education situations. Efforts are needed to improve teacher training in technological and pedagogical competencies and provide resources and appropriate adaptations for the online learning of students with dyslexia, as explained in Burgos et. al, 2020: having teachers trained with sufficient technological literacy, educational designs adjusted and adapted to virtual environments, didactic planning. Furthermore, it is essential to recognize and value the crucial role of families as collaborators in their children's educational process. To address these limitations, various future lines of action are proposed. Firstly, investing in teacher training in technology and pedagogy adapted to dyslexia is essential. This will enable educators to develop effective strategies for teaching students with dyslexia online.

Another important line of action is adapting content and resources. Online educational materials specifically designed for students with dyslexia, including more readable text formats, interactive exercises, and visual resources, should be created and made available to educators. Furthermore, greater individualized attention for students with dyslexia is proposed. This involves providing personalized support and

adaptations according to each student's needs, which may include individual tutoring schedules and detailed feedback. Moreover, it is important to involve families in the educational process. Workshops for parents can be offered, and resources can be provided to help families support their children with dyslexia at home.

Ongoing research is crucial to better understand the experiences of students with dyslexia in distance education environments. This will identify new strategies and effective approaches to address their specific needs. Finally, ensuring universal access to electronic devices and internet connection for all students, even in emergencies, is necessary. This will reduce the digital divide and ensure that no one is left behind in online learning. These future lines of action aim to improve the quality of education for students with dyslexia in online education situations, addressing the identified limitations and promoting a more inclusive and effective learning environment

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ARTIFICIAL INTELLIGENCE USAGE

The authors declare that they have not used any IA software for the creation of this manuscript. ChatCPT was used for the correction of some English expressions.

DECLARATION OF COMPETING INTEREST

None declared.

AUTHOR CONTRIBUTIONS

Ana Isabel González-Contreras: conceptualization, methodology, software, data curation, writing - original draft preparation, supervision, writing - reviewing and editing.

David Pérez-Jorge: conceptualization, methodology, software, data curation, writing - original draft preparation, supervision, writing - reviewing and editing.

Elena Honorio González: data curation, writing - original draft preparation, validation.

Isabel Alonso-Rodríguez: visualization, investigation, writing - reviewing and editing.

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APPENDIX 1

Questionnaire Questions

Table 1

Questions in the questionnaire addressed to students

Questions for students
1. How do you feel during confinement?
2. What have you changed to adapt to the new situation?
3. What difficulties are you developing and organising your school work?
4. If you feel overwhelmed, explain why.
5. What is your «day-to-day life» like during confinement? A typical day, with the school routines that you have in your family.
6. Has the relationship with your family changed, and how has it changed (if they help you to organise yourself, if they explain some content to you, ... if the relationship with the person who helps you most with homework has worsened, etc.)?
7. How are you organising yourself to do your homework (who helps you, how much time do you spend per day, do you take longer than without confinement, what kind of tasks take you longer, what subjects are less complex and more difficult for you)?
8. What personal and family benefits are you experiencing despite the confinement?
9. This is an unwanted and unforeseen situation, but what are you learning positively from this confinement to help you in the future?
10. What would you say to your teachers or professors to help you improve your school work?
11. What other information would you like to provide?

Table 2

Questionnaire questions for pupils' families

A. Questions for parents or legal guardians.
12. Describe how you perceive your child emotionally during the confinement (how it affects him/her, changes you observe, ...).
13. Explain what your child has had to change to adapt to the new situation. Please describe how you perceive your child emotionally during confinement (how it affects him/her, changes you observe, etc.).
14. Discuss your child's difficulties in doing and organising him/herself in school work.
15. Explain if you feel overwhelmed or pressured because your child needs to finish homework in the proposed time.
16. Describe «everyday life» during confinement, a typical day, with the family's school routines.
17. Describe if you have experienced any change in your relationship with your child and how it has changed (if you help him/her to organise him/her if any content is explained to him/her, ... if your relationship with him/her has worsened/improved).
18. Explain what personal and family benefits about your child you are experiencing despite the confinement.
19. Which competences are you learning that will be useful for your child in the future «thanks» to the confinement (digital competences, organisational competences, creativity, ...)?
20. In general, rate the attention of the teaching staff and how your child's learning difficulties have been considered in the confinement situation.
21. What improvements would you suggest to the teaching staff to facilitate your child's learning in the confinement situation?
22. What improvements would you propose to the educational administration to facilitate your child's learning in the confinement situation?
23. What other information would you like to provide?

In addition to these questions, participants were advised to indicate the following characteristics to situate the research:

- | | |
|-------------------------|------------------------|
| (1) E-mail address | (4) Age |
| (2) Studies carried out | (5) Gender |
| (3) Academic Level | (6) Place of residence |

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Development of Linguistic Competence in English for Specific Purposes Through ChatGPT: A Case Study

Miguel Ángel Jordán Enamorado 

IULMA, Universitat de València, Valencia, Spain

ABSTRACT

Introduction: The launch of ChatGPT has popularized the use of Artificial Intelligence and has opened a debate about the opportunities and risks of this digital tool. Although it is still in development, ChatGPT offers numerous application possibilities as an educational resource.

Purpose: To explore the application of ChatGPT in enhancing English for Specific Purposes (ESP) learning, particularly in the field of tourism.

Method: In this research, 91 students from two groups taking the English 2 course at the University of Valencia used ChatGPT to complete tasks aimed at improving their English for Tourism Purposes (ETP) skills. Students used digital devices to interact with ChatGPT and submitted their work through the university's platform. The tasks included reading comprehension, vocabulary exercises, and role-play activities relevant to the tourism field. After the activities, students' interactions with ChatGPT were collected, and the quality of ChatGPT's responses was analyzed, with a focus on achieving at least 80% accuracy. This methodology was designed to provide real-world language practice and was evaluated to ensure the effectiveness of ChatGPT's assistance.

Results: The findings reveal that despite some limitations, ChatGPT proves to be a versatile and highly effective tool for both classroom and self-directed learning. It enhances students' written communication skills through role-play activities by simulating conversations, that require students to write responses to its questions and providing them with detailed corrections and suggestions for improvement. In vocabulary acquisition, through a text-based methodology, ChatGPT helps students identify, define, and use relevant terms, which improves their overall language proficiency. Additionally, the interactive nature of ChatGPT tasks and its ability to provide instant feedback increase student engagement and motivation.

Conclusion: This study's findings indicate that ChatGPT can be a valuable tool for English for Specific Purposes (ESP) learning, despite some limitations in accuracy that hinder its unsupervised use. It is particularly effective for generating activities, obtaining additional information about texts, and vocabulary practice, although its current effectiveness in correcting activities requires teacher supervision. The ability of Chat GPT to create real-world scenarios with minimal preparation time makes it a useful resource for both classroom and autonomous learning. However, further research is essential to explore its full potential and address its limitations, ensuring reliable integration into language curricula.

KEYWORDS

artificial intelligence, English for specific purposes, ICT, linguistic competence, educational innovation

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Correspondence:
Miguel Ángel Jordán Enamorado,
miguel.jordan@uv.es

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INTRODUCTION

On November 30th, 2022, the OpenAI Artificial Intelligence Laboratory unveiled ChatGPT, a prototype chatbot capable of engaging in conversational interactions

with humans (Taecharungroj, 2023). Within five days after its launch, ChatGPT had already surpassed one million users, and this number increased to one hundred million within two months¹. Its ability to emulate human writing styles

¹ Gratas, B. (2 de marzo de 2023). 50 datos y estadísticas de ChatGPT que debes conocer. [50 Facts and Statistics About ChatGPT You Need to Know]. Invgate. <https://n9.cl/sgr5p>



and its widespread popularity have captured the attention of the media, sparking debates about the potential negative consequences of its use². These controversies have also emerged in the educational sector, as there is concern that some students may use ChatGPT to complete their assignments³.

In recent months, various articles have been published related to the possible uses of ChatGPT both within education in general (Kasneci et al., 2023) and in second language learning (Kohnke et al., 2023). Within this field, some studies have addressed the usefulness of ChatGPT as a tool to improve written expression (Barrot, 2023), others have analysed its usability for learning formal English language through a questionnaire-based approach (Shaikh et al., 2023). Additionally, Moqbel et al. (2023) have proposed a framework for the evolution of foreign language learning evaluation, considering the emergence of tools like ChatGPT. According to these authors, our current educational context recommends the implementation of alternative assessments more focused on the learning process rather than just the outcomes. Therefore, instead of resorting to traditional exams and papers, teachers should rely on other assessment methods such as performance-based assessment, self-assessment, portfolios, peer-assessment, games, and teacher observations. While this proposal is interesting, further research is needed to better understand the implications of these new tools in the learning and assessment process. In the field of ESP, some studies have been carried out that offer suggestions about the usefulness of ChatGPT in teaching English focusing on the techniques for training language models in the field of ESP (Kovačević, 2023).

The integration of ChatGPT in education has sparked varied viewpoints among teachers and students. Iqbal et al. (2022) reveal that educators approach ChatGPT cautiously due to concerns about cheating and plagiarism, despite recognizing benefits like simplified lesson planning. ElSayary (2023) explores teachers' perceptions, highlighting benefits in teaching and learning contexts but emphasizing challenges related to bias and accuracy. Ulla et al. (2023) discuss EFL teachers' positive attitudes towards ChatGPT, tempered by concerns about its accuracy and potential to foster excessive student dependence. In a broader context, Firat (2023) discusses the opportunities and challenges of AI integration, advocating for collaborative efforts to address concerns and ensure responsible implementation. Research indicates that despite its current limitations, ChatGPT is perceived as a promising tool; however, teachers stress the importance of addressing biases and ethical considerations, highlighting the need for collaboration to maximize its benefits while preserving the human element in education.

Although the literature on ChatGPT has grown quickly since its launch, most of it deals with the possibilities and risks of its use, users' perception, and technical development. Some authors have provided a theoretical-practical framework for the correct application of ChatGPT in a variety of educational fields (Ghafar, 2023; Halaweh, 2023; Elbanna & Armstrong, 2024). However, none of these works address the implementation of specific methodologies in the classroom, nor do they evaluate the quality of the results offered by ChatGPT. Additionally, there is a significant gap in understanding its specific efficacy in specialized educational contexts such as ESP.

This study aims to tackle these gaps by conducting a case study that explores the potential applications of ChatGPT within the field of Tourism. The primary objective is to evaluate the effectiveness of ChatGPT when interacting with students during the implementation of an ESP methodology. This paper also aims to provide teachers with some guidelines for using ChatGPT in the ESP learning process, both in the classroom and independently. Additionally, through our case study, we aim to contribute to research on AI applications to personalize education and foster autonomous learning in the field of second language acquisition, specifically in ETP.

Research Questions:

- RQ#1: How efficient is ChatGPT as an educational tool in the field of ESP?
- RQ#2: How can educators effectively utilize ChatGPT to enhance the ESP learning process?

LITERATURE REVIEW

Artificial Intelligence Language Models and ChatGPT

GPT-3 (Generative Pre-trained Transformer) is a third-generation AI language model developed by the OpenAI laboratory, which operates on natural language processing (Brown et al., 2020). Language models are statistical tools that predict the next word in a sequence based on a specific context (Jiang et al., 2020). GPT-3 is designed to generate sequences of words, codes, or data in response to a user prompt (Floridi & Chiriatti, 2020). This language model is trained on a dataset composed of texts, primarily in English, but also in other languages.

² Muskat, E. (7 de enero de 2023). Students Caught Cheating Using AI on Final; Academic Integrity Policy Updated - *The Commentator*. <https://n9.cl/fdkj0>

³ Marche, S. (6 de diciembre de 2022). The College Essay Is Dead. Nobody is prepared for how AI will transform academia. *The Atlantis*. <http://bit.ly/3iEoPEd>

In recent months, GPT-4 was developed. Although our study was carried out with the GPT-3.5 version, it is worth noting that GPT-4 represents a groundbreaking leap in natural language processing, boasting human-level performance across a spectrum of professional and academic exams. It surpasses existing language models and prior state-of-the-art systems, which often required tailored crafting or additional training protocols. GPT-4 breaks new ground by accepting prompts containing both text and images, enabling users to articulate tasks encompassing both vision and language. Whether handling documents rich in text and visuals or diverse multimedia inputs, GPT-4 showcases remarkable adaptability. However, akin to earlier iterations, GPT-4 is not infallible, occasionally producing inaccuracies or hallucinations. Despite this, it significantly reduces such errors compared to prior models, with an impressive 19 percentage point increase in factual accuracy over the latest GPT-3.5 version. Consequently, while GPT-4 opens exciting possibilities for various applications, caution remains imperative, especially in contexts where accuracy is paramount⁴.

ChatGPT is a conversational robot (chatbot) that uses the technology of the GPT-3.5 language model to generate texts that resemble those produced by humans. The GPT-3 language model's advanced technology has been employed to create scholarly articles (GPT-3, Osmanovic & Steingrimsson, 2022; Manohar & Prasad, 2023), short stories (Lucy & Baman, 2021), newspaper articles⁵, stories, poems, speeches (Brown et al., 2020; Hernández Rizzardini et al., 2021), and other types of written content that are difficult to distinguish from human-originated texts (Elkins & Chun, 2020). However, this capability of AI has raised concern about the possibility of its misuse for creating false news or manipulating public opinion (Floridi & Chiriati, 2020) and for its political bias (Rozado, 2023). Nonetheless, it has also been suggested that it could be used as a helpful tool for writers and content generators to automate or save time in the preparation of repetitive content (Jaimovitch-López et al., 2022).

Several recent studies have highlighted the limitations of ChatGPT^{6, 7}, which must be considered when using the tool in educational or professional contexts. While ChatGPT is capable of producing coherent responses, these responses are not always accurate or reliable due to the lack of context and limitations in its training (García-Peñalvo, 2023). As a result, the tool may offer seemingly sensible but incorrect

answers due to its inability to comprehend the text it generates or the context of the information (Thorp, 2023). In some instances, ChatGPT has even created content, without any solid foundations on external sites, or provided false sources (King & ChatGPT, 2023; Rudolph et al., 2023). Therefore, further research is needed to test the reliability of the current version and subsequent updates of ChatGPT and other similar tools to verify the suitability of their use in different contexts.

While recent years have seen significant advancements in AI and language models, there persist numerous technical limitations and crucial ethical considerations regarding their impact. The potential for these models to be used detrimentally poses high risks that can influence all facets of society and culture. Hence, it becomes imperative to initiate educational and social awareness campaigns, as well as maintain vigilant surveillance and updated legislation. These measures are essential to protect the well-being of individuals and ensure the responsible utilization of AI⁸.

Artificial Intelligence and Language Learning

In 2019, three years before the release of ChatGPT, UNESCO organized the International Conference on Artificial Intelligence and Education where experts and researchers from various countries analysed the potential of AI in the educational field and the significant transformation this technology could bring in terms of methodology, accessibility to knowledge, and educational tools⁹.

Several applications of AI in education are emerging, and three approaches are particularly noteworthy. Firstly, the creation of online platforms for self-learning, secondly, educational robotics, and thirdly, intelligent conversational software agents or chatbots. Chatbots, in particular, can act as virtual tutors in learning environments that require guidance by answering students' questions. They can also conduct automated and adaptive assessments, even with open texts, and offer reinforcement activities inside and outside the classroom, thereby enhancing the flexibility of teaching (Padilla, 2019). In this way, chatbots can effectively contribute to personalizing the learning experience, which is the area where AI offers the greatest potential for development in education.

⁴ Achiam, J., Adler, S., Agarwal, S., Ahmad, L., Akkaya, I., Aleman, F. L. & McGrew, B. (2023). Gpt-4 technical report. <https://openai.com/gpts-are-gpts-an-early-look-at-the-labor-market-impact-potential-of-large-language-models-2/>

⁵ GPT-3. (2020). A robot wrote this entire article. Are you scared yet, human? *The Guardian*. <https://www.theguardian.com/commentis-free/2020/sep/08/robot-wrote-this-article-gpt-3>

⁶ Bowman, E. (19 de diciembre de 2022). A new AI chatbot might do your homework for you. But it's still not an A+ student. NPR.

⁷ Pearl, M. (3 de diciembre de 2022). The ChatGPT chatbot from OpenAI is amazing, creative, and totally wrong. Need ideas? Great! Need facts? Stay away! *Mashable*. <http://bit.ly/3ZJAkcc>

⁸ UNESCO. (2022). *Recommendation on the Ethics of Artificial Intelligence*. <https://unesdoc.unesco.org/ark:/48223/pf0000381137>

⁹ UNESCO. (2019). *International Conference on Artificial Intelligence and Education. Final Report. Planning Education in the AI Era: Lead the leap*. <https://unesdoc.unesco.org/ark:/48223/pf0000370967>

There is a wide range of digital tools available for language acquisition that promote self-directed learning and reduce the effort required for manual creation of learning activities. These tools offer several advantages for language learners. Firstly, they promote learner autonomy and allow for personalized teaching. With these tools, students can work at their own pace and focus more on the areas in which they face the most difficulties. Furthermore, they offer prompt feedback, which accelerates the learning process, increase students' motivation levels by providing a wide range of activities and resources that can better align with their interests and needs (Kwon, 2023).

Conversational interfaces, also known as chatbots, have been successful in capturing user attention and increasing interaction. Research has shown that conversational formats are more effective for learning than memorization tools like flashcards (Ruan et al., 2019). Previous conversational models had limitations and were restricted to asking pre-defined questions, but advancements in language models, such as BERT, Gopher, and GPT-3, have resulted in more sophisticated technology with texts that are almost indistinguishable from those written by humans. While these models have been employed to aid in writing tasks, including revising punctuation, spelling, and text structure, their potential for personalized language learning has yet to be fully realized (Kwon, 2023).

ChatGPT offers the advantages of digital tools developed over recent decades without the limitations of previous conversational interfaces. It provides greater flexibility in both conversation format and content, which allows for more varied interactions than those that occur within a traditional language classroom (George & George, 2023). By simulating human interactions, ChatGPT enables users to engage in authentic conversations with the chatbot. ChatGPT can synthesize ideas and provide information, while users can ask related questions and request clarifications. This tool offers students an opportunity for more authentic and personalized language learning experiences compared to those they receive when studying with textbooks or online language courses. Through written conversations on a variety of topics of their interest, students can engage more deeply with the language (Hong, 2023).

ChatGPT can be a valuable tool for foreign language students to enhance their writing skills. It not only detects errors in language and text organization but also suggests corrections and provides ideas to improve writing¹⁰. It helps in acquiring new vocabulary by explaining the meaning of words in detail and offering examples of their use in different contexts (Kwon, 2023). Moreover, its responses and corrections are almost immediate, which is impossible in a traditional teaching context (Hong, 2021).

English for Tourism Purposes

The learning of a language encompasses both general and specific knowledge. General knowledge pertains to skills useful for broad language use, while specific knowledge is particularly valuable in certain contexts. The teaching of ESP must consider the specific characteristics of the field in which users will apply their knowledge, as well as the demands and features of that context.

Communication in the field of tourism involves a diverse range of contexts and genres, including legal or corporate documents, professional meetings, video calls, web pages, press releases, tourist guides, brochures, emails, advertising texts, and reviews. Therefore, students need to develop various linguistic, communicative, intercultural, and professional skills. While designing an ETP course, teachers should base their teaching on the diversity of genres, contexts, and authentic materials (Marjanovikj-Apostolovski, 2019). However, ETP learning is often limited to textbook-based methodologies (Ho, 2020) and lacks authenticity in decontextualized learning environments (Lee & Park, 2020). Additionally, many ETP courses focus mainly on vocabulary acquisition, grammar and reading comprehension and do not emphasize students' written and oral communication skills, which are crucial for professional practice in tourism communication. Hence, creating more authentic learning environments is necessary for effective ETP classroom training (Lin et al, 2021). Through our study, we intend to test ChatGPT's capability to help teachers and learners in the task of creating learning environments that better resemble the features of real-world scenarios.

Using materials from the real world is one way to provide authenticity to learning contexts. Such materials increase student motivation, reflect changes in language use, are versatile, and can be used in various ways to develop different skills. Using authentic materials helps students to understand the language that is actually used, making it more effective in capturing their attention and arousing their interest, even though it can increase the difficulty of tasks (Pustika, 2010). When designing text-based ETP methodologies, it is essential to ensure that the materials meet the necessary requirements for effectiveness, such as stimulating interaction, promoting learning skills and strategies, allowing students to focus on both the form and function of the materials, and being attractive and flexible (Nabijanovna et al., 2021). Therefore, teachers must look for texts, which are connected not only with the contents of the subjects but also with the real world and with students' interests and professional needs. This way, students will feel that they are preparing themselves for their future careers and not only practising for class activities and exams.

¹⁰ Ohio University. (2023). *ChatGPT and Teaching and Learning*. <https://www.ohio.edu/center-teaching-learning/resources/chatgpt>

METHOD

Participants

The methodology was implemented in a classroom setting to facilitate ETP (English for Tourism Purposes) learning with the aid of ChatGPT. This implementation was conducted across two distinct groups: 43 students in the first group and 48 in the second. These students were enrolled in the subject English 2 within the first-year curriculum of the English Studies degree program at the University of Valencia, corresponding to a B2 level according to the Common European Framework of Reference for Languages¹¹. This degree program includes subjects covering linguistics, literature, foreign language acquisition, and cultural studies. Prior to the implementation of the methodology, the students were informed about the research and participated voluntarily.

Equipment

Students used various digital devices (laptops, tablets or mobile phones) to do the activities and upload them to the digital platform of the university. During the English 2 class dedicated to implementing the methodology, instructors provided students with a document in which the tasks that had to be completed individually using ChatGPT, which will be found in the procedure section, were explained

Instruments and Methods

Although there are currently various language models, ChatGPT was chosen due to the popularity that this tool has obtained as a consequence, at least in part, of the controversy that aroused its launch, and which was echoed by a large number of media outlets¹².

This case study consisted of several phases. The initial phase involved the design of activities by the researchers, taking into consideration the unique linguistic and educational needs of ETP students and based on insights garnered from professional contexts and textual genres pertinent to the field of tourism (Marjanovikj-Apostolovski, 2019; Ho, 2020; Lee & Park, 2020). The activities were structured to encompass aspects of language practice, including reading comprehension, writing proficiency, grammar, and vocabulary. Oral expression and comprehension skills were excluded due to ChatGPT's lack of speech recognition capabilities in the version available in March 2023.

In the reading comprehension section, a list of webpages related to tourism was created (Appendix 1). Several text-based activities were designed for this section. First, students must select a 450-600- word text from the webpage, this way, students engage with authentic and relevant material. This not only allows them to practice reading within a meaningful context but also to explore topics of interest in their field of study. Then, they must choose a person or place mentioned in the text and ask ChatGPT to provide them with more information about it. This exercise enables students to delve deeper into the content and expand their understanding beyond what is explicitly presented in the original text. Finally, in order to help them apply their analytical and synthesis skills, participants have to ask ChatGPT to create open-ended reading comprehension questions, answer them and instruct the chatbot to correct their answers.

The vocabulary section of the methodology also includes text-based activities. The first task comprised several steps. First, participants must ask ChatGPT to extract the most relevant nouns from the text, provide a definition for each one, and classify them by semantic fields. This process not only reinforces understanding of specific lexical items but also contextualizes their usage within thematic frameworks. Then, they have to ask it to generate a fill-in-the-blanks exercise based on that vocabulary and, finally, instruct it to correct their answers. After completing this task, another similar one must be conducted, but this time, the focus will be on collocations, further refining students' ability to combine words effectively within the appropriate linguistic contexts.

The last section consists in a role-play activity, which contributes to improving English writing expression due to several key factors. Firstly, by engaging in simulated conversations with ChatGPT, students encounter authentic communicative situations that allow them to practice the creation of coherent responses. This practice helps them develop skills in organizing ideas and expressing themselves clearly in English. Students can choose from three possible scenarios to converse with ChatGPT: a conversation between a tourist agent and a client, a dialogue between a tourist agent and a service provider, or a job interview for a tourism agency position. Following the conversation, the participants must request ChatGPT to review their written text, highlight any grammar or spelling errors, and provide suggestions for improving their writing.

Procedure

The implementation of the methodology took place during the time of a regular class of the subject English 2. Students had been previously instructed to bring a digital device to

¹¹ Council of Europe. Council for Cultural Co-operation. Education Committee. Modern Languages Division. (2001). *Common European framework of reference for languages: Learning, teaching, assessment*. Cambridge University Press.

¹² Peritz, A. (6 de septiembre de 2022). *A fun, easy new way for students to cheat*. Slate Magazine. <https://slate.com/technology/2022/09/ai-students-writing-cheating-sudowrite.html>

do the activities. First of all, students downloaded the document with the instructions from the university digital platform. In this document they found the activities explained in the Tools and Materials section.

The participants began with the reading comprehension section (Appendix 2. Examples 1 and 2), then they moved to the vocabulary activities with nouns (Appendix 2. Example 3). and collocations (Appendix 2. Example 4). Finally, they participated in a role-play activity with ChatGPT (Appendix. Example 5 and 6).

In order to collect all the data, at the end of the class, each student exported the content of their interactions with ChatGPT into a Word document, and subsequently submitted it to the university’s digital platform. Each document included all the prompts introduced by students and the answers, exercises, and comments generated by ChatGPT. The data were then analysed, which involved reviewing and evaluating the quality of ChatGPT’s responses to the students’ instructions.

To assess the validity of ChatGPT’s corrections on the students’ responses we evaluated the percentage of errors detected by ChatGPT compared to the total errors made by the students. There is some research on the evaluation of large language models and chatbots (Maroengsit et al., 2019; Casas et al., 2020; Chang et al., 2023). However, none of it deals with the effectiveness of ChatGPT or other language models in generating and correcting activities. Therefore, after consulting the previous research, a criterion was established, requiring at least 80% accuracy for a response to be deemed valid. This threshold was chosen considering the tool’s developmental stage, which allows for a margin of error. For instance, if ChatGPT was tasked with extracting collocations from a text, it was necessary that 80% of the extracted items were collocations, since, occasionally, word constructions which are not collocations were also extracted. This same evaluation criterion was consistently applied to various tasks. However, for the role-play tasks a different criterion was followed. We considered answers valid if they aligned with the students’ instructions, involving maintaining a conversation on the chosen topic and providing text improvement suggestions. Conversely, ChatGPT’s answers that deviated from the given instructions were deemed erroneous.

Data Analysis

The data were analysed manually. The percentages shown in the following figures are the average of all the interac-

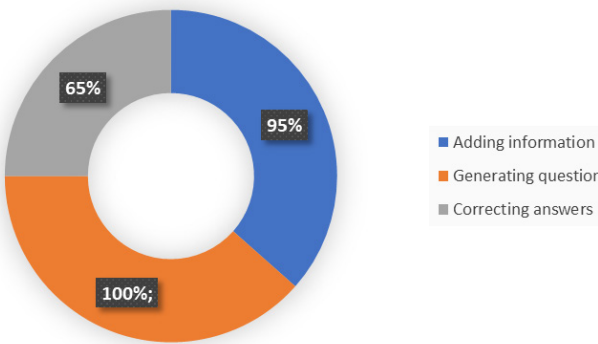
tions of ChatGPT with the participants according to the validity criteria explained above.

RESULTS

Reading Comprehension Activities

Figure 1 illustrates the accuracy of ChatGPT’s answers in its interaction with students’ while conducting the reading comprehension activities.

Figure 1
Reading Comprehension Exercises (Valid Responses)



Vocabulary Activities

As can be seen in Figures 2 and 3, the task with nouns had a higher validity percentage than the one with collocations. When extracting collocations, ChatGPT included word structures, which cannot be considered as collocations and occasionally even single words. It was also less efficient when generating exercises with collocations. The correction of the fill-in-the-blanks exercises with nouns and collocations generated by ChatGPT had quite similar results.

Figure 2
Nouns exercises (Valid Responses)

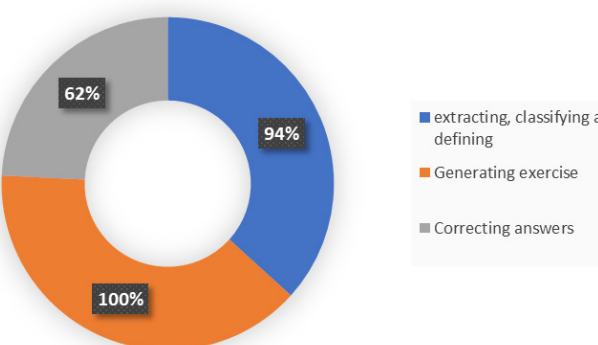
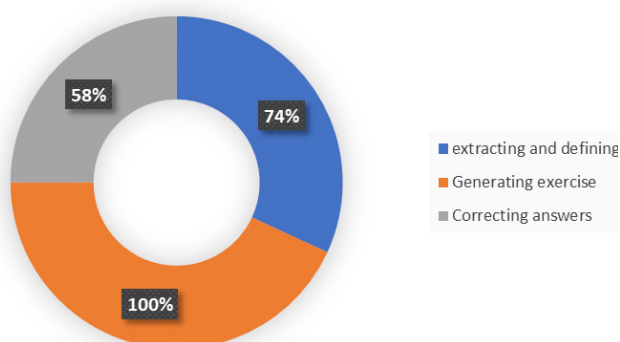
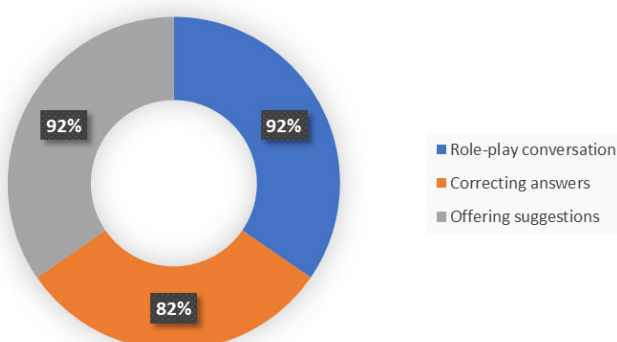


Figure 3*Collocation exercises (Valid Responses)*

Role-play activities

The results shown in Figure 4 illustrate that ChatGPT was able to maintain a role-play conversation with the students and offer suggestions to improve their texts on most occasions.

Figure 4*Role-play activity (Valid Responses)*

DISCUSSION

This paper addresses the applicability of ChatGPT to ESP teaching through the analysis of the results of implementing an ESP methodology with the assistance of ChatGPT. The first research question queried the efficacy of ChatGPT as an educational tool in the ESP domain. The results of the current research highlight that, despite current limitations, ChatGPT demonstrates effectiveness for the generation of exercises and providing information in ETP methodologies both in and out of the classroom. The exercises explained in the Instruments and Methods section, which can be complemented with other activities depending on the characteristics of the course, allow students to hone reading comprehension and written expression skills and to acquire vocabulary necessary for their professional development. Furthermore, ChatGPT's capability to create tasks from any

text type offers endless opportunities for selecting authentic materials for reading comprehension without burdening teachers or students with excessive time demands. This feature presents a significant advantage in ETP learning.

ChatGPT excels in task creation; however, its effectiveness in correcting student answers hovers around 60%, making it unreliable for autonomous learning. Nevertheless, the results obtained provide insight into ChatGPT's potential to enhance the effectiveness of autonomous learning processes in the future. Considering its current capabilities and limitations, ChatGPT can be viewed as a valuable teaching complement rather than a substitute for teachers in task preparation and correction. A balanced approach, combining human interaction with machine potential should be advocated.

The findings of this research align with previous studies on the applications of ChatGPT in education. For example, several studies (Hallaweh, 2020; Montenegro-Rueda et al., 2023; Saz-Pérez & Pizà-Mir, 2024) affirm that this tool enables the customization of content and activities to meet the specific needs of each student, thereby improving the effectiveness of the teaching-learning process and boosting student motivation and engagement. Additionally, Zhu et al. (2023) and Lo (2023) emphasize ChatGPT's potential as a virtual tutor capable of answering student questions, improving group dynamics, and providing real-time feedback. However, they also caution about possible inaccuracies in the information generated by ChatGPT. For this reason, Saz-Pérez and Pizà-Mir (2024) conclude that ChatGPT can be a useful tool for designing teaching-learning processes, as long as its limitations are acknowledged, and that teachers or guides are present to supervise tasks. Our findings also highlight the versatility of ChatGPT in generating texts and activities tailored to the needs and circumstances of the students. Similarly, through our study, it was observed that while the immediacy of ChatGPT's responses enhances student workflow, a cautious use of this tool is still recommended, as the answers are not always accurate.

Regarding the second research question, namely, how can educators effectively utilize ChatGPT to enhance the ESP learning process, it has been proven that ChatGPT holds promise as a valuable tool for creating authentic learning environments, especially in second language teaching and ETP. It effectively simulates real conversations, allowing students to participate in role-playing games that mimic professional tourism scenarios. Additionally, its ability to generate original texts enables interaction with materials similar to those encountered in future professional settings. For instance, ChatGPT can be assigned to compose an email where a customer expresses a complaint or seeks information about a trip organized by a tourism agency. Subsequently, students must respond to the email, which will then be evaluated by ChatGPT, focusing on both content

and formal structure. Similar approaches could be extended to cover various textual genres and professional contexts.

While not advisable for independent study, ChatGPT serves as an invaluable classroom resource, which can be implemented under teachers' supervision for collaborative work among students, including those with a higher level of English who can offer guidance to their peers. For instance, written expression practice is often limited in the classroom environment due to the time-consuming nature of correcting students' texts. However, with ChatGPT's assistance, teachers can allocate class time to prepare a text and then use the chatbot to identify errors. This enables students to practice written expression more frequently and receive immediate feedback, overseen by the teacher.

The results of our study are similar to the findings of previous research in this field. Bin-Hady et al. (2023) have shown that ChatGPT helps students in reading, writing, grammar, and vocabulary, making it a valuable tool for language skill development. According to Kohnke et al. (2023) ChatGPT's ability to generate authentic interactions and provide personalized feedback enables teachers to develop tailored lesson plans and materials for individual student needs. Furthermore, ChatGPT can simulate real-life dialogues, create texts in various genres, and produce quizzes and comprehension questions, thereby supporting a wide range of teaching activities (Baskara, 2023). However, to ensure successful implementation, it is crucial to provide teachers with adequate training on the use and limitations of this technology, and to address related ethical and pedagogical challenges (Hallaweh, 2020; Montenegro-Rueda et al., 2023; Saz-Pérez & Pizà-Mir, 2024).

The previous findings meet our expectations, as although we were aware of ChatGPT's ability to work with texts of all kinds and effectively respond to user prompts, the fact that it is a tool in development led us to expect lower effectiveness when performing tasks such as correcting and analysing texts entered by students.

Since the release of ChatGPT, several studies have been published on the applicability of this tool in the educational field, particularly in English language teaching. De Winter (2023) answered an official English reading comprehension test using both ChatGPT 3.5 and ChatGPT 4. The results indicated that the earlier version of ChatGPT scored just above the average of Dutch students, while the latest version surpassed the students' scores by almost 1.5 points. This highlights ChatGPT's capability in answering reading comprehension questions. On the other hand, Wang et al. (2024) created a methodology that utilized ChatGPT to generate open-ended reading comprehension questions tailored to a variety of levels. Their assessment showed that the questions produced by ChatGPT were considered more appropriate than those created by humans.

Multiple studies (Dueñas et al., 2023; Shin & Lee, 2023; Lin & Chen, 2024) have compared the formulation of multiple-choice reading comprehension questions by ChatGPT and human authors. The outcomes revealed that ChatGPT's questions were on par with those developed by humans. The results of these studies align with our research findings by highlighting ChatGPT's effectiveness in generating reading comprehension questions, both on texts created by itself and on existing texts extracted from various sources. However, none of these studies evaluates the quality of ChatGPT's corrections of student responses. Furthermore, none of these studies explored the possibility of requesting additional information from ChatGPT about the text in general or its specific contents. According to our findings, ChatGPT is very effective in providing complementary information to the text and generating questions. However, its effectiveness decreases in correcting students' responses. This may be partly due to how students worded their answers, which can be confusing for ChatGPT. Nonetheless, this limitation is mitigated by the fact that when correcting the exercise, ChatGPT evaluates the answers as "correct," "incorrect", or "partially correct" and offers the correct answers to the questions posed.

There is also a variety of publications about the applicability of ChatGPT to vocabulary acquisition. Kohnke et al. (2023) highlight the advantages of employing chatbots such as ChatGPT for vocabulary instruction. They note these chatbots' ability to offer a broad array of expressions, questions, and vocabulary, aspects that may not always be readily available from human language partners. This feature contributes to fostering an authentic and engaging environment for language learning. Practical suggestions from the study include prompting ChatGPT to define words, generate sentences using specific vocabulary, or provide commonly used business phrases.

Within the field of vocabulary acquisition, Yildiz (2023) explores how ChatGPT can enhance this process by not only helping to understand the meaning of words but also providing explanations and examples of how and when to use them. Octavio et al. (2024) also emphasizes the versatility of ChatGPT to improve students' vocabulary and analyse the application of ChatGPT by educators for designing classroom materials and tasks. In the realm of ESP, Kovačević (2023) examines ChatGPT's application in creating personalized exercises. Through meticulous calibration on specific ESL datasets, educators can devise exercises that target specific grammar structures and vocabulary.

Our findings also support the applicability of ChatGPT to vocabulary acquisition. Its ability to generate activities and provide vocabulary lists and explanations makes it a suitable instrument in this field. Our study differs from previous research by analysing the quality of ChatGPT's responses when correcting students' answers to the vocabulary exercises that it had previously created.

There have been few studies examining ChatGPT's capability to generate role-play activities as an educational resource for teaching English. Stampfl et al. (2024) introduced role-play exercises in the classroom to cultivate a more engaging and relaxed learning environment. Students engage in diverse conversations with ChatGPT, thereby practicing English language skills. Mitra et al. (2023) generated role-play simulations tailored for professional preparation in the cybersecurity sector with ChatGPT. While not primarily educational in nature, this research underscores ChatGPT's capacity to simulate human interactions across different contexts. None of these articles evaluates the quality of ChatGPT's interaction nor its capability to correct students' texts or provide them with comments on their performance.

Several limitations of the current research should be mentioned that need to be addressed in future studies. Firstly, it is necessary to conduct studies with a larger number of participants, including students with diverse levels of English proficiency, as our study participants had relatively similar levels. Research in other fields of ESP beyond tourism is also essential. Furthermore, studies should encompass a broader range of language skills activities and include different types of exercises.

CONCLUSION

The development of AI, particularly through conversational interfaces like ChatGPT, represents a significant advancement in technology with broad implications for education. This paper presents the results of a case study on the potential applications of ChatGPT in ESP and its effectiveness when used by students. The findings indicate that currently, ChatGPT can be a helpful tool for ESP learning, despite its limitations as a developing technology. The lack of accuracy in a significant percentage of interactions still poses an obstacle to its unsupervised implementation in language learning. However, its current capabilities are sufficient to recommend its use as a tool for teachers and advanced learners who can detect its inconsistencies. The current ver-

sion of ChatGPT allows for creating activities based on any text type with minimal time investment, facilitating the provision of real-world scenarios for practicing communication skills. Therefore, ChatGPT can serve as an educational resource for learning English both in the classroom and in autonomous learning contexts, although its current limitations highlighted by our study must be considered. In essence, ChatGPT is useful for generating activities, obtaining additional information about a text, and working on vocabulary, but its effectiveness in correcting these activities cannot yet be relied upon.

While there is ample literature on AI, further research into its educational applications is essential. This study has highlighted some limitations of ChatGPT when used as a language-learning assistant. It is crucial to continue researching in this area, expanding both the scope of study and the number of research participants. Additionally, experimental studies should analyse the results of implementing methodologies based on ChatGPT to determine whether this tool enhances student motivation and learning effectiveness. Furthermore, it is important to conduct studies proposing specific methodologies for using ChatGPT and other AI-based tools in the classroom environment under the guidance and supervision of teachers.

DISCLAIMER

When writing this article, ChatGPT was used as a language reviewer, corrector and, on occasion, translator. The content was generated by the author, and all sources used have been cited and included in the reference list and footnotes.

DECLARATION OF COMPETING INTEREST

None declared.

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APPENDIX 1

List of tourism webpages

<https://delhitourism.gov.in/delhitourism/index.jsp>
<https://edinburghtips.com/>
<https://en.wikivoyage.org/wiki/Kinshasa>
<https://paristouristinformation.fr/>
<https://www.nyctourism.com/>
<https://www.srilanka.travel/>
<http://www.saint-petersburg.com/>
<https://www.sydney.com/>
<https://www.travelalberta.com/>
<https://www.visitberlin.de/en>
<https://www.visitbritain.com/en>
<https://www.visitdublin.com/>
<https://www.wien.info/es>

APPENDIX 2

Example 1

Student: Can you create some reading comprehension questions for the following text? (The text selected by the student can be consulted through the following link: <https://www.visitbritain.com/en/things-to-do/spectacular-scottish-festivals>)

ChatGPT: Certainly! Here are some reading comprehension questions based on the provided text about Scottish festivals and events:

1. Describe the scene at the Edinburgh Military Tattoo. What elements and performances are mentioned in this description?
2. What is the central theme of the text, and how does it emphasize the importance of music in Scotland's culture?
3. What event concludes the Edinburgh International Festival, and what musical ensemble performs during this conclusion?
4. According to the text, what are some of the unique features of Scotland's music scene, and how does it celebrate its heritage?
5. Name at least three festivals or events mentioned in the text, along with their distinctive characteristics or locations.
6. What are some of the musical genres and performance types featured at the Edinburgh International Festival?

(...)

These questions are designed to test your understanding of the information provided in the text, including details about the festivals, their cultural significance, and the types of music and activities associated with them. Principio del formulario

Example 2

Student: Can you tell me if the following answers are correct or not and if they aren't, can you provide me with the right answer? (the text selected by the student can be consulted through the following link: <https://www.nyctourism.com/articles/guide-to-the-statue-of-liberty>) (...).

ChatGPT: Sure, I can provide feedback on your answers:

1. Your answer is correct. Some people may miss visiting the Statue of Liberty because it is on an island in New York Harbor and can only be accessed by boat. Planning ahead and booking tickets in advance is necessary for a visit.
2. Your answer is correct. The American Family Immigration History Center contains records of passengers who arrived in America, making it valuable for families with ancestors who arrived through Ellis Island and for anyone interested in immigrant history.
3. Your answer is partially correct. The Statue of Liberty was indeed a gift from France to commemorate the centennial of the USA's independence. However, it's worth noting that it was also meant to convey a message of goodwill and freedom from France to the United States.
4. Your answer is correct. The creators of the Statue of Liberty wanted it to symbolize liberty as a guiding light for people's lives, emphasizing peaceful and lawful principles.

Your answer is somewhat vague. The question is about why the creators were careful not to make Liberty appear to be «leading an uprising.» The correct answer should elaborate on how they wanted to represent liberty as a guiding light rather than a symbol of rebellion or upheaval

Example 3:

Student: Can you extract the most relevant nouns from the following text, offer a definition of each one and organise them in semantic fields? (The text selected by the student can be consulted through the following link: <https://www.srilanka.travel/adventure-sports>).

ChatGPT:

National Parks and Wildlife Sanctuaries:

- Yala: A national park and wildlife sanctuary in Sri Lanka, known for its diverse ecosystems and abundant wildlife.
- Lunugamvehera National Park: A large national park located in Sri Lanka, characterized by its dry semi-arid climate and rich biodiversity.
- Important Bird Areas (IBAs): Designated areas recognized for their significance in supporting bird populations and biodiversity conservation.
- (...)

Geography and Location:

- Yala: A region in the southeast of Sri Lanka, encompassing parts of the Southern Province and Uva Province.
- Southeast region: The geographical area situated in the southeastern part of Sri Lanka.
- Southern Province: One of the nine provinces of Sri Lanka, located in the southern part of the island.
- (...)

Marine Life and Diving:

- Indian Ocean: The oceanic expanse bordered by Africa to the west, Asia to the north, Australia to the east, and the Southern Ocean to the south.
- Visibility: The distance at which objects can be clearly seen underwater, affected by factors such as water clarity and light conditions.
- Diving: The activity of swimming underwater using breathing equipment, such as scuba gear, to explore underwater environments.
- (...)

Maritime History and Activities:

- Ocean: A vast body of saltwater that covers much of the Earth's surface.
- Maritime visits: Historical visits made by ships or vessels to coastal regions and ports.
- Bandits, Pirates: Individuals or groups engaged in maritime piracy, involving robbery, theft, and violence on the high seas.
- (...)

Mountaineering and Adventure:

- Mountains: Elevated landforms with steep slopes and peaks, typically rising higher than hills.
- Ranges: A series of mountains or hills grouped closely together, often forming a continuous chain.
- Climbing: The activity of ascending steep or vertical surfaces, such as mountains or cliffs, using hands, feet, and specialized equipment.
- (...)

Example 4:

Student: Can you extract all the collocations from the following text? (The text selected by the student can be consulted through the following link: <https://www.paristouristinformation.fr/things-to-do/church/notre-dame/>)

ChatGPT: Here are some collocations extracted from the text:

- | | |
|-------------------------------|----------------------------------|
| 1. Notre-Dame Cathedral Fire | 11. Medieval roof structure |
| 2. Timeline of the Renovation | 12. High altar |
| 3. Massive fire | 13. Valuable religious treasures |
| 4. Cathedral in 2019 | 14. Valuable treasures |
| 5. Big panels | 15. Louvre Museum |
| 6. Prevent any access | 16. Restoration of Notre Dame |
| 7. Scaffoldings are in place | 17. Start of the renovation work |
| 8. Start of rebuild | 18. Covid-19 lockdown |
| 9. Magnificent architecture | 19. Renovation Fund |
| 10. Devastating fire | 20. Architectural masterpiece |

21. Official Foundations
22. Donation Fund
23. Guided Tours

24. Entrance to Notre Dame
25. Twin bell towers
26. Self-guided audio tours

Example 5:

Student: Hello. I'd like to have a role-play conversation with you. You'll be a tourist agent and I'll be a client

ChatGPT: Sure, I can be a tourist agent. Where would you like to go on your vacation, and what kind of trip are you interested in planning?

Student: I'd like to go to a place with beaches and I want to do scubadiving activities

ChatGPT: That sounds like a fantastic choice for a vacation! There are many beautiful destinations known for their beaches and great scuba diving opportunities. Could you please specify a region or country you have in mind, or would you like me to suggest some popular options based on your preferences?

Student: Can you suggest some places?

ChatGPT: Certainly! Here are a few fantastic destinations known for their beautiful beaches and excellent scuba diving opportunities:

1. Bali, Indonesia: Bali offers stunning beaches, vibrant underwater life, and a variety of dive sites suitable for all levels of divers. You can explore coral reefs, shipwrecks, and encounter a wide range of marine species.
2. Thailand: Destinations like Phuket and Koh Tao in Thailand are known for affordable yet spectacular diving experiences. You can dive alongside colorful fish, explore underwater caves, and complete your scuba certifications. (...)

These are just a few options to consider for your beach and scuba diving vacation. Depending on your preferences and budget, we can explore these options further or discuss any other specific requirements you may have. Is there a particular destination that caught your interest?

Student: I'd like to go to Thailand

ChatGPT: Thailand is an excellent choice for a beach and scuba diving vacation! There are several beautiful destinations within Thailand that offer fantastic diving experiences. (...)

Example 6:

Student: Can you proofread my part of the conversation and tell me if I have made any mistakes?

ChatGPT: Of course, I'd be happy to proofread your part of the conversation and check for any mistakes.

1. «*I'd like to go to a place with beaches and I want to do scubadiving activities*» - This sentence is mostly correct, but «scubadiving» should be written as «scuba diving» with a space.
2. «*Can you suggest some places?*» - This sentence is grammatically correct.
3. «*I'd like to go to Thailand*» - This sentence is grammatically correct.
4. «*Which of the above destinations do you recommend me?*» - This sentence should be written as «Which of the above destinations do you recommend for me?» or «Which of the above destinations do you recommend?» The preposition «for» is commonly used in this context.
5. «*I have little experience and I want to go to a place where I can do other activities*» - This sentence is grammatically correct.
6. «*Ok, thanks*» - This is a casual and common way to express gratitude, but it's often written as «Okay, thanks» or «Okay, thank you.»
7. «*Can we talk about the budget now?*» - This sentence is grammatically correct.
8. «*I'd like to spend a maximum of 2000 dollars*» - This sentence is grammatically correct.

Overall, your conversation is clear and well-structured. There are only minor corrections needed, as noted above. If you have any specific questions about any part of the conversation or need further assistance, please let me know!

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English Adjectival Predicates Taking Subjunctive Complements: What to Change in Curricula

Eugenia Romanova , Anna Oveshkova 

Institute of Philosophy and Law, Russian Academy of Sciences, Ural Branch, Russia

ABSTRACT

Background: Similar projects have been undertaken before with the objective to improve English instruction. However, our work is different in that a) it is based on formal theoretical premises; b) the range of the studied data goes far beyond any analogous paper; c) we compare the subjunctive uses to those of indicative and modal auxiliaries; d) we focus on adjectives and their variable selectional properties concerning the mood in complement clauses.

Purpose: We use vast corpus data to reconsider the information about the English subjunctive mood in complement clauses of adjectival predicates. This is needed to fine-tune the English language curricula for undergraduate language and linguistics students, as well as postgraduate students of different areas.

Method: We searched for eleven non-factive adjectives in two English corpora: the academic subcorpus of the Corpus of Contemporary American English (COCA) and the Corpus of Global Web-Based English (GloWbE). The latter is divided into the British and American subcorpora. The adjectives are *advisable*, *anxious*, *desirable*, *eager*, *essential*, *imperative*, *important*, *necessary*, *obligatory*, *urgent*, *vital*. We manually sorted the findings in such a way as to discard all unsuitable, wrong, and deficient contexts relying on syntactic and contextual analysis. Then we calculated the number of occurrences of each structure of interest (the subjunctive mood, modal auxiliaries, the indicative mood) after the adjectives. Finally, we analysed the patterns and made appropriate generalisations for further didactic implementation.

Results: We found that the selectional preferences of the adjectives under study fall into three distinct groups: for modals (*anxious*, *desirable*, *eager*), for the indicative (*essential*, *important*, *vital*), for the subjunctive (the rest). We also came across some by-products in our analysis: modal agreement between predicates and auxiliaries in complement clauses; an unexpected contrast in adjectival selectional patterns across the English varieties; a cross-variety robustness of our generalisation concerning the makeup of the established classes.

Conclusion: The conclusions must be taken into account in designing English for Academic Purposes curricula with the new information replacing outdated facts. It should be made clear that English does not have predicates solely selecting for the subjunctive. This statement is corroborated by a fairly regular variation of mood patterns in complements of non-factive adjectives stemming from certain semantic features inherent in them. However, the nature and the realisation of such features in grammar is to be further tested in linguistic theory.

KEYWORDS

generative linguistics, corpus-based study, mood and modality, subjunctive mood, adjectival predicate, selectional property, English language curriculum

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Correspondence:
Eugenia Romanova,
evgeniya.romanova@icloud.com

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INTRODUCTION

The challenge of teaching the English subjunctive mood intricacies could not have escaped researchers pondering on such a necessity: the mood itself seems to be rapidly disappearing from the language. A few authors diligently inspect-

ed school and university curricula on the subject and arrived at conclusions full of controversy (see Bastien & Vinz, 2014). Other papers just outlined how to teach the English subjunctive to ESL students (Li, 2023; Azizpour & Alavinia, 2021, etc.), or investigated the mood from the position of second language acquisition



(Jabbarpoor & Tajeddin, 2013). Simultaneously, ongoing formal theoretical research into the selectional properties of predicates taking subjunctive complements appears to be ignoring the English language, which is understandable due to the feeble status of the phenomenon in it. Nevertheless, some persistence in recording the use of the subjunctive is encouraged by the opportunity to undertake corpus studies (see, e.g., Moessner, 2020). In (Deshors & Gries, 2020) and (Lee, 2006), attempts were made to apply corpus tools to the study of acquisition and teaching of the English subjunctive. However, the three disparate issues above – EFL curricula, sound theoretical background, and corpus findings – have never been combined and discussed as a system. To us, it looks vital to find out whether the current usage of the subjunctive constructions reflected in corpus studies can receive a theoretical foundation similar to the one available for the Romance languages, and whether this foundation can serve a firm ground for reconsidering the ESL and EAP curricula.

At different levels of English language teaching targeted at undergraduates in foreign language departments and graduate students preparing for their exit examination, we deal with the necessity of explaining and drilling the subjunctive mood. However, both didactic and linguistic sources differ on a number of issues related to this subject. In order to clarify grammatical, semantic and distributional basis of the phenomenon, we need to understand the subjunctive morphology. Moreover, we should determine the place of the subjunctive mood within the modal system of the English language. Finally, we have to identify the most common contexts where this mood occurs. In this paper we aim to fill in these gaps by demonstrating the contemporary usage of the subjunctive mood in the English language to alter the theoretical basis and empirical content of the related curriculum.

In the textbooks published abroad¹ and in Russia (the USSR) (Rubtsova, 1989; Shevtsova et al., 1984; Mikhelson & Uspenskaya, 1989; Blokh, 2000), the topic of the subjunctive mood seems to be among the messiest ones. The reason for this disorder lies in the fact that there are two historical approaches to the subjunctive mood. The first approach follows the development of the actual morphological system English used to have (the formal or “true” subjunctive) (Moessner, 2020; Depraetere & Reed, 2021; Aarts, 2012). The second approach disregards English grammar and focuses on semantic interpretations typical of subjunctive verbs in other languages, e.g. Latin (the notional subjunctive (Portner, 2011)).

In the sources above, the subjunctive mood is defined when corresponding expressions denote hypothetic, possible, or desirable events. Due to the vagueness of such a definition, the formal properties of the subjunctive are manyfold and include modal auxiliaries with infinitives, past tense forms, and zero morphology. To refer to past tense forms in conditional clauses by the term *subjunctive* has been a long-standing tradition not only in the Soviet textbooks² (Blokh, 2000), but also in those published abroad. For example, Simon³ (2013) states:

“The subjunctive <...> is usually difficult to notice, as it has no distinctive forms in current English, only those that resemble other verb forms (bare infinitive, past simple and past perfect).”

An approximate semantic description underlying the subject matter in the above-mentioned textbooks makes the grammatical account of it a tricky task. Thus, we had to investigate what exactly is required from teachers in EAP curricula. We analysed some of such curricula recently designed in several top Russian educational institutions to teach PhD students. Ten English programs were selected, including those of MGIMO University, HSE University, Moscow State University, as well as several institutes of the Russian Academy of Sciences. Seven curricula were published in 2022, which means that the documents are quite up to date. We rigorously examined their contents with particular regard to irrealis (for example, the subjunctive mood, modal verbs, and modality). 50% of the analyzed materials do not specify what grammatical material PhD students have to master while doing their EAP course. It is just indicated that students are to write and speak grammatically or know the basic grammatical rules characteristic of scientific language. Three curricula mention modal verbs and the subjunctive mood separately in their grammatical-competence requirements. The other two documents specify that various means of expressing modality (including mood) are part of the EAP course.

Nevertheless, no detailed recommendations are given. Formulated in generalities, the programs do not provide any relevant didactic materials. Modality is a very broad category, and it can be expressed with numerous linguistic means belonging to various language levels (lexical, morphological, and others). The reference lists offered to PhD students fail to solve the issue as they often include outdated resources or suffer from the major drawbacks thoroughly criticized above. Thus, we face the same challenge: what exactly we should teach when introducing our PhD students to irrealis in (scientific) English.

¹ For instance, see Simon, P. (2013). *The grammaring guide to English grammar with exercises* (2nd ed.). Kindle edition. <https://www.amazon.com/Grammaring-Guide-English-Grammar-Exercises-ebook/dp/B00G321AYO>

² Shevtsova, S. V., Brandukova, M. A., Kuz'mina, I. S., & Parkanskaya, L. V. (1984). *The Intermediate Modern English Course. Second Year*. Vysshaya shkola.

³ Ibid.

We should raise the following questions concerning this particular Grammar topic:

- RQ1: How widespread is the subjunctive mood in academic and other sources that our students read in English and translate into Russian?
- RQ2: What theoretical generalisations can be drawn from corpus findings?

To show how the subjunctive is treated and understood in modern linguistics, we will start our paper by reviewing relevant literature. As a comprehensive account of existing works on the topic has been provided in numerous sources and would be excessive here, we will look into the main issues commonly raised by generative linguists. Representing the formal approach to language, generativists do not base their studies on the semantics of the subjunctive mood only. Their spheres of interest include the predicates that take subjunctive complements; the morphology of the subjunctive; the syntax-semantics interface; the universal properties of the subjunctive found across languages.

LITERATURE REVIEW

Different Understandings of the Term Subjunctive

The term *subjunctive mood* has no uniform definition across and even within various linguistic frameworks. This is due to the fact that grammar and semantics can interact, but in fact do remain separate modules. Thus, according to Portner, mood can be distinguished following the criteria of form, meaning, and use. Consequently, there are a variety of descriptions, including the notional mood based on verbal mood-like meanings, similar to the descriptions (2011, pp. 1263–64). Even though the idea of the subjunctive is not uniformly understood in the literature, there is some consensus on the number of moods in English, namely indicative, imperative, and subjunctive, both in this country⁴ and abroad (Bergs & Heine, 2010; Depraetere & Reed, 2021).

From the formal point of view, there are two main strands of thought. Some linguists, like Giannakidou (2011, p. 3), claim that “one can make the case that the formal category of mood does not really exist as a distinct category in English”. Others still find examples of the subjunctive mood in English, but they are really scarce. Nevertheless, they seem to have two clear forms: the first coincides with bare infinitives, and the second is *were*. Most linguists believe that that is what remained from the old system which has largely died out⁵.

Depraetere & Reed (2021) call these forms the present subjunctive and the past subjunctive, respectively. The present subjunctive is used in formulaic expressions, for instance, *God **save** the Queen* (dismissed by B. Aarts (2012) as unproductive and obsolete); in conditional clauses (*if need **be***); after verbs, adjectives, and nouns expressing volition, called the mandative subjunctive (*the board desires that changes **be made** to the plans*). The past subjunctive is employed to represent non-factual or counterfactual situations (*it would be great if it **rained** tonight; I wish he **had told** me about it*). The authors treat the second form more broadly adding to *were* any past-marked verbs. Like their Soviet colleagues, Depraetere & Reed (2021) subdivide various instances of the English mood into inflectional (described above) and analytic (involving modal auxiliaries).

Speaking of the past tense marking, von Stechow & Iatridou (2023) claim that the extra layer of past tense in conditional clauses (*If Miranda **knew** the answer...*) is referred to as “counterfactual” in linguistics and “subjunctive” in philosophy and logic (see also Iatridou, 2000; Stowell, 2008; Crowley, 2024).

Thus, the understanding of the subjunctive mood varies from author to author. In the subjunctive are included:

- (1) the morphologically null non-agreeing forms of the so-called present subjunctive; they are clearly discernible only next to 3rd person Sg subjects;
- (2) “unreal” past forms expressing counterfactuality;
- (3) the so-called analytic subjunctive making use of modal auxiliaries.

What unites them is their non-factual semantics, and a few researchers base their classifications on the meaning, thereby promoting the idea of the “notional subjunctive”, as you remember from the Introduction. So, next we will closely look at how the semantics of the subjunctive mood is understood in the literature.

What the Subjunctive Mood Means

The study by Giannakidou (2009) contains a fairly long list of approaches to the semantics of the subjunctive, for example, speech acts and illocutionary force; *realis* (indicative) and *irrealis* (subjunctive) distinction; veridicality and nonveridicality; a null ordering source, and gradability. The oldest and most general distinction is *realis* vs *irrealis*. In the Cambridge Dictionary of Linguistics (Brown & Miller, 2013, p. 293), mood is defined through this prism: it is “usually realized by affixes on verbs but also by different types of clause. It relates to speakers’ judgements of situations as real or factual vs unreal/irrealis or non-factual.” A. Giannakidou (2009, p. 1889) refines this distinction and develops the notion of ve-

⁴ Gordon, I. P., & Krylova, Ye. M. (2021). *Grammatika sovremennogo angliyskogo yazyka* [Modern English grammar]. Izd. KDU.

⁵ But see (Blok, 2000), where it is unexpectedly claimed that the English system of the subjunctive mood is in the making.

ridicality. Veridicality is a formal semantics phenomenon: “a propositional operator *F* is veridical if from the truth of *Fp* we can infer that *p* is true according to some individual *x* (i.e. in some individual *x*’s epistemic model)”.

However, Baunaz & Puskás (2022) claim that veridicality does not relate to the subjunctive. According to the definition above, predicates like *regret* or *be happy* should be considered veridical, yet they trigger the subjunctive mood in French:

(6) Léon est content que Georges ait fini son chapitre.
Leon is happy that Georges have.3SG.SUBJ finished his chapter
'Leon is happy that Georges finished his chapter.'

Similar examples can be found in other languages. We will illustrate this point by a sentence from Russian (Dobrushina, 2012, p. 134), where a fully veridical predicate requires a subjunctive complement.

(7) On vse-taki dobilsja, čtoby ekzamenacionnye raboty devuški byli prosmotreny ešče raz i oceneny bolee ob'ektivno.
'In the end he managed to get the girl's exams reconsidered and re-evaluated in a fair way.'

The veridicality approach hinges on the fact that “descriptively, the subjunctive is considered to express some kind of “modality” but what kind exactly is never made specific” (Giannakidou, 2011, pp. 4–5). Givón (1994, p. 277) also underlies the modal nature of the subjunctive and says that although “an air-tight, categorical definition of “subjunctive” remains an unrealistic goal, one could certainly identify the most likely subjunctive foci along the two scalar sub-dimensions of irrealis – epistemic and valutive/deontic”.⁶

In formal semantics, there is another long-standing approach to mood and modality originating from a few studies (Hintikka, 1962; Stalnaker, 1979; Cresswell & von Stechow, 1982 as cited in Giorgi & Pianesi, 1997, p. 205) and in different works by Angelika Kratzer summarised in (Kratzer 2012). Discussing conditions behind mood choice in subordinate clauses, Giorgi & Pianesi (1997) indicate that “such conditions have traditionally been analysed by hypothesising the presence of a modal operator requiring the clause to be true in a particular set of worlds, distinguished from the actual ones, the so-called *doxastic alternatives*”, that is “possible states of affairs” can be different from the actual one, “albeit possibly connected with it”. The idea of some normalcy characteristic of the actual world and possibilities and necessities realised in alternative (modal) worlds gave rise to the whole system of modal descriptions.

Crosslinguistically, notional modality is expressed through a variety of means. A. Kratzer (2012) lists its instantiations,

such as modal auxiliaries, modal suffixes in adjectives, and modal lexical units. Translating her German examples into English, we get such instances of modality as the adjectives with the suffix *-able* (*sociable*, *accessible*, *conceivable*, *infallible*, etc.), modal auxiliaries (*must*, *can*, etc.), adverbs (*possibly*), impersonal constructions (*it is necessary that*), and adjectival phrases (*to be able*). She concludes that there is no syntactic category of modality and asks “What, then, is modality?”. Answering this question, she introduces the term *conversational background*, which serves to reflect the role of context in the semantically vague category of modality. This background specifies the *modal base* and the *ordering source*. The modal base is formed, for example, when a realistic conversational background

<...> determines the set of accessible worlds by tracking the actually available evidence in closely related worlds. <...> Stereotypical conversational backgrounds can be used to rank worlds according to how close they come to the normal course of events in the world of evaluation, given a suitable normalcy standard. In that case, they function as ordering sources. (Kratzer 2012, p. 39)

Semantic underpinnings of modality are developed in other groundbreaking publications. Giorgi & Pianesi (1997, p. 217) claim that the ordering source can be null and non-null and the modal base realistic and non-realistic. A comprehensive review of modal semantics is beyond the scope of this paper. What we will focus on further, is the choice of mood by the speaker. As it will be demonstrated below, it depends on a language and characteristics of a predicate selecting for a form of the subordinate predicate.

Where the Subjunctive Mood Occurs

Terminology and Universality

Despite the fact that terminology describing different predicate types taking subjunctive or indicative complements varies from author to author, it is possible to find the common core behind each class name. From a large array of terms proposed for different languages (Giorgi & Pianesi, 1997; Giannakidou, 2009, 2011a, 2011b; Baunaz & Puskás, 2014, 2022; Dobrushina, 2012; Cornilescu, 2003), we have selected the terms to be used from now on: 1) desideratives (verbs expressing desires or wants: *to want*, *to desire*, *to hope*; adjectives *eager*, *anxious*, *willing*, *reluctant*); 2) directives (*to order*, *to suggest*, *to insist*); 3) modals (*it is possible*, *it is necessary*); 4) fiction verbs (*to dream*, *to imagine*); 5) epistemic verbs (*to think*, *to believe*); 6) verbs of saying (*to say*, *to claim*, *to observe*); 7) factive emotives (*to regret*, *to be surprised*); 8) non-emotive factives (*to realise*, *to remember*, *to discover*).⁷

⁶ “Epistemic modality (also sometimes called evaluative modality) is concerned with the speaker’s assessment of the truth of a proposition. <...> Deontic modality is concerned with the granting of permission and the imposing of obligation.” (Brown & Miller, 2013, p. 289)

⁷ Most of the information can be found in (Baunaz & Puskás, 2022, pp. 10–11).

Most languages seem to coincide in a small group of predicates selecting for the subjunctive; they are desiderative (*prefer, wish, want...*), directive (*suggest, order, insist...*), and modal (*it is necessary that...*) (Portner, 2011, p. 1265; Giorgi & Pianesi, 1997; Baunaz & Puskás, 2022, pp. 20–21).

Apart from these three categories, we observe a range of patterns. In some languages, certain predicates obligatorily select for subjunctive complements, but in others the same predicates take indicative ones. Moreover, even language-internally the selectional properties of the same predicate can alternate. See the examples for the Italian verb *pensare* ‘think’ (8) (Giorgi & Pianesi, 1997, p. 223) and the French verb *comprendre* ‘understand’ (9) (Baunaz & Puskás, 2014, 2022). N. Dobrushina (2012, p. 129) cites a lot of cases of such intralinguistic alternation (see (10)): the paper arranges 58 predicates along the scale of mood selection frequency and shows that most of them can take both subjunctive and indicative complements⁸.

- (8) Gianni pensa che Mario abbia/ha mangiato una mela
Gianni thinks that Mario has (SUBJ)/(IND) eaten an apple.
- (9) a. Jean comprend que Jules prend des photos.
Jean understands that Jules take.ind des pictures
b. Jean comprend que Jules prenne des photos.
Jean understands that Jules take.subj des pictures
- (10) a. Kogda-to mama mečtala, čto Glaša stanet vračom. Ind.
b. Kogda-to mama mečtala, čtoby Glaša stala vračom. Subj.
‘Years ago Mom wanted Glasha to become a doctor.’

In the previous section we showed that the selection for mood does not always depend on veridicality/reality/factivity of the selecting predicate. Considering this and the variation illustrated in (8) to (10), we can agree with Baunaz & Puskás (2022) and other authors that the realis/irrealis semantics of the predicate does not seem to be a decisive factor for the selection of a certain type of complement. What is the reason for such inconsistency and variability? Let us have a closer look at predicates taking subordinate clauses.

Classification of Predicates Taking Subordinate Clauses

Factivity and Emotivity. The relevant literature contains ample evidence that the distribution of the subjunctive is closely connected to the semantics of predicates it follows.

The seminal paper that gave rise to the discussion of various types of complements after different types of predicates was written as long ago as in 1970 (Kiparsky & Kiparsky, 1970). It distinguishes factive from non-factive predicates “that take sentences as their subjects” and shows that the former ones have a few features absent from the latter⁹. Moreover, both factive and non-factive predicates can be further subdivided into emotive and non-emotive, which also proves to be an important distinction for the choice of mood in the subordinate clause (Kiparsky & Kiparsky, 1970, p. 143; pp. 169–170). Table 1 summarises the Kiparskys’ theory.

Table 1
Classification of Predicates with Subordinate Clauses as Presented in Kiparsky & Kiparsky (1970)

	Factive	Non-factive
Non-emotive	<i>well-known, clear be aware, make clear, forget</i>	<i>likely, sure, possible, seem, probable suppose, assert, allege, claim, believe, anticipate, foresee</i>
Emotive	<i>important, relevant, instructive, sad, fascinate regret, resent, deplore</i>	<i>improbable, unlikely, urgent, vital</i> (the latter two are marked as future-related) <i>intend, prefer, anxious, willing, eager</i>

Even though the cited paper does not specifically cover the topic of the subjunctive mood, it laid a solid foundation for the analysis of predicates’ selection for mood. Later we will return to the classification offered above with a special focus on English examples.¹⁰

A Wider View. In Cornilescu (2003) a lot of focus is given to adjectives, which is especially valuable for us. The researcher follows Kratzer (2012) and Giorgi & Pianesi (1997) in treating non-realistic contexts as reflected in non-null ordering sources with “more than one alternative to the actual world” and adopts the four-fold classification from Kiparsky & Kiparsky (1970) into factive vs non-factive and emotive vs non-emotive now considering their selection for mood in subordinate clauses.

She claims that non-factive non-emotive adjectives (*(un)necessary, impossible, imperative, likely, conceivable*) are nearly always used with the subjunctive (where the author also

⁸ However, 38% of the listed predicates only take subjunctive complements and one verb (hope) is always followed by the indicative.

⁹ There is an alternative approach to extraposed subjects: such clauses are analysed either as complements of sentential predicates or associates of it (Hartmann, 2012). Obviously, there is a clear distinction between A and B. Only A can undergo raising to the subject position and replace it (A’):

(A) It is important that he is helpful. (Realis)
(B) It is important that he be helpful. (Irrealis)
(A’) That he is helpful is important.
(B’) *That he be helpful is important.

Whichever theory one follows, what we observe here is distinct syntactic behaviours of subjunctive and indicative clauses.

¹⁰ The problem is that most works on subjunctive complements of different verbs have been produced for the Romance languages and Greek, where, unlike English, the subjunctive is realised either morphologically or as a sentential mood.

includes clauses with modals). Interestingly, she accounts for the use of the modal auxiliary *may* as “a sort of modal agreement between the main predicate and the auxiliary in the complement clause”.

(11) It is conceivable that he may win.

Emotive predicates exhibit double mood selection (the subjunctive and the indicative). They are divided into factive and non-factive, like in the groundbreaking work by the Kiparskys (1970). Non-factive emotives include *good, right, essential, urgent, annoying, silly, understandable* <...>, and ‘importance adjectives’ *advisable, crucial, desirable, essential, imperative, important, necessary, obligatory, vital*. Factive emotive adjectives include *odd, tragic, crazy, surprising, bothersome*, etc. Adjectives *anxious* and *eager* are called volitional.

Next, we will look at the analysis of semantic features of emotive and non-emotive (cognitive) predicates.

Semantic Features. Also borrowing some of the terminology from Kiparsky & Kiparsky (1970), Baunaz & Puskás (2022) call epistemic verbs cognitive (= non-emotive) non-factives and desideratives future-referring. Basing on French data, they focus their study on emotive factives (*be happy*), which, unlike English counterparts, are followed by subjunctive complements. They try to isolate specific semantic features responsible for this phenomenon and come to the conclusion that those features are connected with the external argument of the main predicate. The distinctive feature seems to be emotivity present in emotive factive and future-referring predicates.

In the work partly discussing French adjectival predicates (Léger, 2006), we can see that different modal adjectives have heterogeneous syntactic distribution, some allowing both personal and impersonal constructions (*certain*) and most only impersonal ones (*necessary*). Moreover, such adjectives as *certain* take indicative complements, and *necessary* and the like take subjunctive predicates. The distinction lies in different types of modality, namely epistemic for *certain* and deontic for *necessary*. In Giorgi & Pianesi (1997) and Giorgi (2009) the feature responsible for mood choice in Italian is the presence or absence of the speaker’s coordinate: “Verbs of communication always require the representation of the speaker and feature the indicative. <...> Verbs concerning cognitive states (*regret*) do not require the speaker’s coordinate and select the subjunctive” (Giorgi, 2009, p. 1851). Grisot et al. (2023) experimentally studied the effect tense and aspect of the main predicate have on selectional properties of the complement mood in varieties of French.

As the analysed works demonstrate, despite some language specific details, realis/irrealis features are frequently not sufficient criteria underlying mood choice. In addition, such semantic features as emotive/cognitive, epistemic/deontic, speaker’s coordinate, and even tense and aspect can con-

tribute to the selection of either the subjunctive, or the indicative.

METHOD

Data Collection

We have studied the selectional properties of eleven adjectives: *advisable, anxious, desirable, eager, essential, imperative, obligatory, urgent, vital, important, and necessary*. The sample was extracted from two corpora created by Mark Davies at Brigham Young University (BYU, USA). We analysed concordance lines from the academic sub-corpus of the Corpus of Contemporary American English (COCA, 81 million words obtained from 100 different peer-reviewed journals; 1990–2019) and the US and GB sub-corpora of the Corpus of Global Web-Based English (GloWbE, each sub-corpus amounts to about 386 million words obtained from web pages; 2012–2013). Detailed guidelines for working with BYU corpora are given in (Davies & Fuchs, 2015).

The general number of hits is 17,095. Out of this number only 6,972 contexts were deemed suitable. The suitability was defined according to the following criteria:

- Time of use: they had to be created not earlier than 50 years ago to ensure the representation of the language spoken and written today;
- Register: they had to be found in modern academic and general English texts, so all religious (e.g. biblical) contexts, translations from Italian, French Renaissance literature into English, as well as not present-day English fragments were discarded;
- No agreement: all the cases where the agreement between the subject and the predicate is neutralised were ignored (12);

(12)

However, it is **advisable that you buy** the sunglasses from a shop (GloWbE).

- No ambiguity between factive and non-factive readings: whenever there was doubt as for the semantics of the adjectival predicative, the context was ignored (13);

(13)

a. ...It is **important that the reader is able** to first survey the entire page and then zoom in (COCA).

b. Nigel Waterson, chairman of The Equity Release Council, said it was **important that policymakers saw** equity release as a solution, not a problem.

- Full presence of the subordinate predicate: all incomplete cases were discarded as their number was infinitesimally small.

So, we created a continuous sample searching for the string *matrix adjective that* (such as *vital that, urgent that, essential that*, and others). Each concordance line was checked manually to identify its syntactic relevance and make sure all con-

texts under analysis were created within the last 50 years (present-day English).

Data Analysis

At this stage, we examined all obtained examples manually to see whether the subordinate clause (the context following *that*) contained a predicate with irrealis semantics. Five such predicate types were identified: the present subjunctive (14), the modal auxiliary *should* (15), other modal auxiliaries (*can/could*, *may/might*, *will/would*, *ought to*, *must*), the present tense (16) and the past tense (17) forms. Present subjunctive contexts were only considered suitable when found next to 3rd person Sg. subjects. Additionally, the verb *be* next to any subject was deemed appropriate as well. The present tense when clearly seen in its agreement forms, i.e. the 3rd person Sg. agreement suffix *-s* in present simple verbs, the agreeing auxiliaries in present continuous and present perfect, was considered indicative.

(14)
I think it's very, very **vital that** *President Obama understand* that he has not scraped his way to victory here (GloWbE, US).

(15)
In the hearing, Hamburg was found making one thing clear that it has become **vital that** *the roles of FDA should again be clarified* as well as re-enforced (GloWbE, US).

(16)
To really excel in the space, it is **vital that** *data is utilised* in the best way for your business... (GloWbE, US).

(17)
We have 108 MLAs because it was **vital that** *every section of society was represented* (GloWbE, GB).

To enhance the efficiency of the data analysis process, the forms were colour-coded. Green was selected for the present subjunctive, yellow for *should*, grey for the present indicative, red for the past tense, and so on.

Despite obvious advantages of using corpora for language analysis, we have faced several challenges while working with COCA and GloWbE. Firstly, technical issues pose a serious obstacle as text fragments can only be copied and pasted manually. Another difficulty consisted in the corpus size. Since many searches yielded immense data, their analysis was time-consuming. Moreover, though corpus methods are traditionally believed to be reliable (see, for instance Egbert & Baker, 2019, p. 4), we found numerous discrepancies in GloWbE. They are as follows: the specified and actual number of concordance lines often differs; concordance lines are repeated; sometimes materials were created elsewhere but not in GB or the USA. Next, some fragments appeared difficult to interpret since the context was incomplete; in the first place, this holds true for the search string *important that*. Finally, ambiguity between factive and non-factive interpre-

tations arose in several contexts, which is exemplified in (13). In its factive reading, the sentence underlines the importance of the reader's ability to survey the entire page etc.; in its non-factive reading, the fragment conveys modality.

RESULTS

The search for subjunctive complements of eleven adjectives yielded the total of 6,972 tokens. The frequency of occurrence largely varies across the adjectives. As can be seen in Table 3, the adjective with most tokens *important* takes up 53.1% of all findings, whereas the least frequent *obligatory* amounts to a disproportionate 0.05%.

How Widespread is the Subjunctive Mood?

We focused on the following types of predicates in post-adjectival subordinate clauses: the formal subjunctive mood, i.e., non-agreeing forms of verbs next to third person singular subjects; the modal auxiliaries of obligation (*must*), advice (*should/ought to*), ability/possibility (*can/could*), probability (*may/might*), volition (*will/would/shall*); agreeing forms of the present tense (obviously, indicative), and unclear past tense forms. At first glance, the most common form is the present tense, whereas the formal subjunctive constitutes just a third of all the findings, and instances of *should* take less than 10%.

Table 2

Breakdown of the Adjectives across the Studied Contexts

Forms in complement clauses	Number of tokens	Proportion
formal subjunctive	2,293	32.9%
must	67	1.0%
should/ought to	573	8.2%
can/could	209	3.0%
may/might	14	0.2%
will/would/shall	43	0.6%
present tense	3,506	50.3%
past tense	267	3.8%

Past tense forms were included in the picture due to the fact that several authors believe them to represent the subjunctive, too: they do not distinguish between the morphological indication of mood and syntactic expression of counterfactuality¹¹. The number of past forms is negligible (from 0 to 4.5% of the general quantity), and it is impossible to decide whether we deal with true past or counterfactual morphology (18–19).

¹¹ Counterfactuality is discussed in (Iatridou, 2000), where the author analyses the past tense morphology in if-clauses and after wish as an indicator of discrepancy between two points in worlds: i.e., we have the world where the speaker produces their utterance and the world where the content of the utterance is true.

(18) It was **important that** *we played* well... (GloWbE, GB).

(19) Closer to home, it was **vital that** *Tullamore itself felt* the value and impact of the event... (COCA).

Modal auxiliaries were included for the same reason as the past tense: a few researchers include them, especially *should*, in the so-called analytic subjunctive. As Table 2 demonstrates, the number of modal tokens is not very large either, with few exceptions.

Table 3 demonstrates the frequency of the predicative adjectives we considered and their individual selectional properties. The most common ones are *important*, *essential*, *imper-*

ative, *vital*, and *necessary*: they are found in at least several hundred relevant contexts.

Table 4 contains umbrella rubrics for modals (Modal verbs), as well as present and past tenses (we thought it was safe to combine them as indicative due to a very small amount of past tense forms in complement clauses and their unclear interpretation). Various modals, on the one hand, and indicative-looking verbs, on the other, were merged into two respective groups. That was done for the sake of convenience, as the main objective here was to reveal the ordering of adjectives with respect to the frequency of their subjunctive complements. The table also illustrates a correlation between high percentage in subjunctive complements and low percentage of indicative complements, and vice versa.

Table 3
The Combined Number of Complement Types Taken by Predicative Adjectives

Adjective	Suitable contexts	Formal subjunctive	Must	Should + ought to	Can + could	May + might	Will/ would/ shall	Present tense	Past tense
Advisable	37	17	-	8	1	1	-	10	-
Anxious	70	16	-	41	1	-	2	9	1
Desirable	112	40	-	45	3	-	4	17	3
Eager	10	4	-	5	-	-	1	-	-
Essential	1,134	383	7	78	29	1	13	587	36
Imperative	789	386	8	26	2	-	4	329	34
Important	3,704	1,083	23	254	140	6	6	2,038	154
Necessary	455	225	19	82	8	4	12	94	11
Obligatory	9	5	2	-	-	-	-	2	-
Urgent	44	22	4	5	2	-	-	9	2
Vital	608	112	4	29	23	2	1	411	26

Table 4
Subjunctive Complements Ordered from Highest to Lowest against Modals and Indicatives

Adjective	Formal subjunctive	Modal verbs	Indicative
Obligatory	55.6%	22.2%	22.2%
Urgent	50.0%	25.0%	25.0%
Necessary	49.5%	27.5%	23.0%
Imperative	48.9%	5.1%	45.0%
Advisable	46.0%	27.0%	27.0%
Eager	40.0%	60.0%	
Desirable	35.7%	46.4%	17.9%
Essential	33.8%	11.2%	55.0%
Important	29.2%	11.7%	59.1%
Anxious	22.8%	62.9%	14.3%
Vital	18.4%	9.7%	71.9%

Colour marks the most significant numbers approaching or above 50%.

Side-Findings of the Study

Modal Agreement. Even though the general number of modal verbs found after the investigated adjectives was fairly small, distinguishing between their semantic classes was not useless. By looking at specific modal verbs, we tested the hypothesis of modal agreement put forward in (Cornilescu, 2003) (see example (11)). In Table 5, we appear to have a whole lot of examples supporting this hypothesis. The darker the colour of a cell is, the higher the percent of respective findings. Cells without colour show insignificant yields.

The Subjunctive in British and American Varieties of English. As another side finding, the two English varieties turned out to be somewhat different. Table 6 demonstrates that there is a noticeable preference for the indicative mood in British English (46.7% indicative vs 26.4% subjunctive) and for the subjunctive mood in American English (58.2% subjunctive vs 16.4% indicative), whereas the number of *should*-complements is nearly the same. For the sake of convenience, the British data are marked green, the American data yellow.

Generalisations of Combined Findings from COCA, GloWbE (UK), and GloWbE (US)

Recall that cross-linguistically preference for subjunctive complements is found in directive, desiderative, and some modal predicates in impersonal constructions (Baunaz & Puskás 2022, pp. 20–21). In our case, all the adjectives can be considered modal predicates, only two cannot be used

in impersonal constructions (*eager* and *anxious*), yet they demonstrate distinctive selectional patterns:

(1) *obligatory, urgent, necessary, imperative, and advisable* mostly select for the subjunctive mood, the remaining two complement types being equally split between modals and indicatives (except *imperative*);

(2) *desirable* (along with *eager* and *anxious* used in personal constructions) prefers modal verbs, especially *should*;

(3) *essential, important, and vital* display a strong preference for the indicative.

Preference of the latter for the indicative mood does not depend on their factive or non-factive interpretation:

(20)

It is **important that** *the act does not place* unreasonable burdens on institutions (GloWbE, GB) (non-factive).

(21)

It is very **important that** *all websites are checked* using some form of audit tool... (GloWbE, GB) (possibly, factive).

DISCUSSION

An Interim Summary: Frequency of Contexts

In this paper, we have analysed a large corpus sample containing subjunctive, indicative, modal, and past-marked complements of an array of English non-factive adjectives that have no coverage in the earlier literature sources. The comprehensive corpus study by Moessner (2020) is strictly diachronic and deals with the subjunctive in Old English, Middle English and Early Modern English. In the works closest to ours in intent, only a limited scope of corpus-based research was conducted. One such study employing corpus

Table 5

Breakdown of the Modal Auxiliaries According to Their Types

Modal findings per Adj	Must	Should + ought to	Can + could	May + might	Will/would + shall
Anxious (44/62.9 %)	-	93.2%	2.3%	-	4.5%
Eager (6/60.0%)	-	83.3%	-	-	16.7%
Desirable (52/46.4%)	-	86.5%	5.8%	-	7.7%
Necessary (125/27.5%)	15.2%	65.6%	6.4%	3.2%	9.6%
Advisable (10/27.0%)	-	80.0%	10.0%	10.0%	-
Urgent (11/25.0%)	36.3%	45.5%	18.2%	-	-
Obligatory (2/22.2%)	100%	-	-	-	-
Important (429/11.7%)	5.4%	59.2%	32.6%	1.4%	1.4%
Essential (128/11.2%)	5.5%	60.9%	22.7%	0.8%	10.1%
Vital (59/9.7%)	6.8%	49.1%	39.0%	3.4%	1.7%
Imperative (40/5.1%)	20.0%	65.0%	5.0%	-	10.0%

Note. Number of modal auxiliaries = 906. The table is organized according to the general percentage for the number of findings per adjective (from 62.9% for *anxious* to 5.1% for *imperative*).

Table 6

Comparison of Occurrences of Two Moods and the Modal Auxiliary *Should* in the British and American Varieties of English

Adjective	Subjunctive		Should		Indicative	
	British (GloW-bE GB)	American (CO-CA+GloWbE, US)	British (GloW-bE, GB)	American (COCA + GloWbE, US)	British	American
Obligatory	60.0%	100%			40.0%	
Urgent	23.0%	8.7%	23.0%	82.6%	54.0%	8.7%
Imperative	25.5%	70.2%	4.4%	2.9%	70.1%	26.9%
Advisable	33.3%	76.9%	23.8%	15.4%	42.9%	7.7%
Eager	42.9%	25.0%	57.1%	75.0%		
Desirable	17.8%	56.2%	62.2%	29.8%	20.0%	14.0%
Essential	15.5%	66.7%	9.3%	5.3%	75.2%	28.0%
Important	14.5%	60.0%	9.9%	4.2%	75.6%	35.7%
Anxious	11.1%	52.4%	71.1%	42.9%	17.8%	4.7%
Vital	11.5%	54.9%	5.6%	5.7%	82.9%	39.3%
Necessary	35.7 %	69.5%	29.3%	14.6 %	35.0%	15.9%

Note. The average of the subjunctive = 26.4% for BE, 58.2% for AmE; the average of *should* = 26.9% for BE, 25.3% for AmE; the average of the indicative = 46.7% for BE, 16.4% for AmE.

linguistics methodology (Deshors & Gries 2020) spans five varieties of English — BE, AmE, Australian English (AusE), and Indian English (IndE). However, it analyses the frequency of just two forms in complements of eight trigger verbs, namely the subjunctive and *should* constructions. Another similar paper (Lee 2006) considers specific Australian, Hong Kong, and Asian English corpora to compare the frequency of *was* and *were* in contexts traditionally linked to the use of the subjunctive. Like the present study, Lee (2006) aims to transform the teaching of this topic, but arrives at no definitive conclusion.

Our contribution then is wider in scope than the studies above as it focuses on Modern English rather than earlier periods in the language history and provides theoretical generalisations based on the patterns we observed. First, we looked at the frequency of occurrences of different structures in complement clauses of predicative adjectives, summarised in Table 2. In Table 4, we merged all the modal verbs into one rubric, and indicative-looking complement predicate forms into another, which together with the subjunctive left us with three general categories. These data show that the most frequent is the indicative form with 54.1% of the findings, next comes the formal subjunctive construction with 32.9% of contexts, and last modal auxiliaries (mostly *should*) with only 13% of all our findings. The result reflects the sentiment about the subjunctive mood going extinct in the English language (but see the contrast between the British and American varieties summarised in Table 6). However, our research also demonstrated that the studied adjectives clearly differ in their selectional preferences for one of the three general patterns. In their complement clauses, they

require the subjunctive form, the indicative form, or an agreeing modal auxiliary, and this generalisation is robust across the varieties.

So, the results of this investigation can become a good starting point for a theoretical analysis of the complement structures of non-factive predicates in the English language. Properly answering the question of what underlies the three patterns we have identified is far beyond the scope of this paper. Anyway, we can at least try to term our groupings appropriately. First, we will address the so-called emotive non-factives which along with directives, desideratives, and modals in impersonal constructions select for the formal subjunctive mood.

Repercussions for Language Theory

A Word on Emotive Non-Factives

To find out if it suits us to borrow the term *emotive non-factive* from (Baunaz & Puskás, 2022), we summarise the way it is utilised in different papers (see the Appendix).

As Table A in the Appendix shows, there is consensus only about *urgent*: all the authors whose works we inspected unanimously term this adjective emotive non-factive. Nevertheless, it is apparent that *eager* and *anxious* differ from the rest of the adjectives, even though they are included in the emotive non-factive class just in (Kiparsky & Kiparsky, 1970).

Used in impersonal sentences, most adjectives can be considered ergative, whereas *eager* and *anxious* are transitive¹²: they have an external argument. Consequently in (Baunaz & Puskás, 2022), they would probably correspond to predicates with sentient, cognitive, emotive, and volitional features (note that Cornilescu (2003) also calls them *volitional*). In (22) and (23), the subject is realised by animate sentient nominals, whereas (24) is impersonal.

(22)

...**Eastman was eager** that *such a display of wonders should not remain* a dead letter...(COCA).

(23)

...**Dewey was anxious** that *we should all contribute* to a common stock of intelligent belief in the hope (COCA).

(24)

It is desirable that *new arid lands should be brought* under irrigation... (GloWbE, US).

Our study shows that *anxious* and *eager* do not select for the subjunctive very often: *anxious* has only 22.0% subjunctive complements, *eager* has also less than a half (40.0%). Instead, they are followed by modals, mostly *should*. The third adjective which approaches *anxious* and *eager* in its behaviour is *desirable* rather than *urgent*: the former has 35.7% subjunctive complements vs 46.4% modal constructions as compared with 50.0% subjunctive vs 25.0% modals in structures with *urgent*. The desiderative future-referring semantics of *desirable* is also closer to that of *eager* and *anxious* than the semantics of *urgent*. Even if the argument structure might play some role in defining selectional properties of *eager* and *anxious*, the lexical semantics seems to be a more significant factor. Anyway, curious as these (desiderative) adjectives are, they can nonetheless be set aside as very rare.

Modal Verbs

We are only left with two groups of modals used in impersonal constructions (minus *desirable*): the ones with preference for the subjunctive (*obligatory*, *urgent*, *necessary*, *imperative*, *advisable*) and the ones with preference for the indicative (*essential*, *important*, *vital*). Following the long-standing tradition of subjective decisions and continuing to map our findings onto the existing template, we should call the first group directives and the second – after (Cornilescu, 2003) – ‘importance adjectives’. Again, there seems to be some semantic basis under this division. As Table 5 demonstrates, we also deal with modal agreement. Why our desiderative adjectives cooccur with *should* is yet to be found out. In (Kiparsky & Kiparsky, 1970, p. 171), it is called a future *should*, which would be appropriate for future-referring predicates,

as is the future auxiliary *will* found after all the three, but especially *eager*.

Another adjective agreeing with *should* – *advisable* – does so due to its semantics: *should* has always been considered a modal auxiliary for giving advice.

Obligatory is clearly a deontic adjective expressing obligation, hence its agreement with *must*.

Can and *could* are mostly observed after ‘importance adjectives’.

Thus, modal agreement indicates that all the studied adjectives possess some modal semantics. But, more importantly, it validates their division into the three classes. Possibly, it can do more: provide some idea of their comparative modal bases and ordering sources.

Subjunctive in English Varieties

There are several surprising findings in respect to the English varieties. At least after adjectives British English (BE) does not have a preference for *should* over the subjunctive contrary to what is stated in some textbooks: it prefers the indicative. American English (AmE) has approximately the same number of occurrences of *should* as BE, with predominantly subjunctive complements. What strikes most is that despite this subjunctive-indicative contrast, both varieties reflect the overall generalisation: there are three distinct classes of adjectives (only *urgent* ‘misbehaves’ in AmE, probably due to some diverging semantics).

In BE, the subjunctive group includes (decreasing, without desideratives) *obligatory*, *necessary*, *advisable*, *imperative*, *urgent* with *essential*, *important*, and *vital* last.

In AmE, the subjunctive group is comprised of *obligatory*, *advisable*, *imperative*, *necessary* with *essential*, *important*, *vital* last. The adjectives closing the lists in both varieties open the opposite list – that of the indicative-taking predicates.

A Rest Stop before the Road Ahead

As is registered in a bulk of literature, cross-linguistically subjunctive complements are mostly taken by directives, desideratives, and modals used in impersonal constructions. The distinction is probably appropriate to verbs, but with adjectives it is quite problematic. Non-factive adjectives are modal in nature and predominantly used in impersonal constructions. However, the lexical semantic classification into

12 *Ergative* is a type of argument structure similar to *unaccusative* in verbs: the only semantic argument of the predicate is internal – in transitive structures they are passive participants taking the object position. Presumably, the only argument of an ergative adjective is a proposition (or some other type of clause, opinions here vary), consequently it is used in impersonal constructions. External arguments are represented by agents or experiencers, like here, in transitive and unergative structures. For deeper and more extensive discussion of adjectival argument structure see (Cinque, 1990; Meltzer-Ascher, 2011; Ramchand, 2018).

directives and desideratives does work with the English adjectives we looked into. Like in other languages, the English directive adjectives (*obligatory, urgent, necessary, imperative, advisable*) favour the subjunctive mood in complement clauses. It is not so with the English desiderative adjectives (*desirable, eager, anxious*): they prefer *should*. In addition, there is a third group of adjectives (*essential, important, vital*) with a strong preference for indicative complements: we termed them ‘importance adjectives’ following (Cornilescu 2003).

Since the group of desideratives is really tiny with 192 tokens out of 6,972, further research can focus on two clearly-cut classes: deontic directives followed by subjunctives, and ‘importance adjectives’ followed by indicatives. Does this split fit in the system outlined in (Léger 2006) and developed in (Baunaz & Puskás 2022) for French? Can we characterise the ‘importance adjectives’ as epistemic modals? What can be said about their modal force? Answering these questions is another undertaking.

Our Suggestions with Respect to the Topic of the Subjunctive

To be able to cover this extensive and variable topic when teaching, one should address several issues. Firstly, it is necessary to introduce the notion of modality and show that subjunctive-taking predicates are possibly connected with it. Explanations should be based on the modal interpretations of possibility vs necessity, on the one hand, and deontic vs epistemic, on the other hand. We advise that educators pay closer attention to the split between realis and irrealis, as well as different ways of their syntactic realisation. It is of the utmost importance that it be decided whether the subjunctive mood is a form or a notion. Treating the subjunctive from the morphological angle is more convenient since this way the term is restricted to two forms: the so-called Present subjunctive (a non-agreeing infinitive-like form) and the so-called Past subjunctive (non-agreeing *were*). Next, English teachers should discuss the distribution of the pure subjunctive form mentioning that it mainly occurs in complements of a few verbs and adjectives. Another critical step consists in describing the semantics of these verbs and adjectives. With this end in view, it is worth mentioning the three types of non-factive predicates with different selectional properties, namely directives, desideratives, and perhaps ‘importance predicates’, with respect to mood. It is recommended that they be presented as instances of a larger phenomenon of modality and modal gradability. Moreover, the variability of selection characteristic of subjunctive-taking predicates should be shown, underlying that this is not only specific for English. However, in English there is some contrast in patterns across the varieties: indicative complements are preferred in British English, subjunctive complements are favoured in American English, whereas

should is equally infrequent in either of them. Last but not least, the term *counterfactual* must be introduced to speak of past tense forms occurring in if-clauses of conditional sentences and in complements of *wish* and some other expressions as “unreal” past, briefly explaining the possible world approach.

CONCLUSION

This paper has demonstrated that the approach to teaching subjunctives, modals, and conditionals as the EAP topic has to be reviewed. We have found that a number of grammatical and semantic phenomena pertaining to the subject of unreality are either not represented, or misrepresented in the EAP curricula. First of all, the umbrella notion of modality is not explained or discussed. Second, our findings indicate that the issue of the subjunctive mood alone requires a more flexible coverage. It should include a speculation about the difference between form and content, an extensive introduction into the distribution of the subjunctive, and a demonstration of variable selectional properties of the subjunctive taking predicates linked to their syntactic and semantic features.

To assess the study limitations, in addition to the above-mentioned technical issues and malfunctions, we should also note that corpus-based studies (and ours is no exception) focus mainly on monologic speech. Thus, the distinctive features of written grammar we have identified may differ from spoken conversation intricacies. Despite the complexity of the whole matter, different ways of realising real and unreal situations through distinctions between modality, mood, and counterfactuality have to be included in the curricula. After all, this can help connect the two main disciplines PhD students are to master: the English language and philosophy.

DECLARATION OF COMPETING INTEREST

None declared.

AUTHOR CONTRIBUTIONS

Eugenia Romanova: conceptualization; data curation; formal analysis; investigation; methodology; project administration; writing – original draft; writing – review & editing.

Anna Oveshkova: conceptualization; data curation; formal analysis; investigation; project administration; resources; writing – original draft; writing – review & editing.

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APPENDIX

Works Using the Term *Emotive Non-Factive* Summarised

Adjectives Classified as Emotive Non-Factive in the Literature

Adjective	K & K	Cornilescu	Léger
advisable	n/a	yes	n/a
anxious	yes (fut.)	no	no
desirable	n/a	yes	yes
eager	yes (fut.)	no	no
essential	n/a	yes	yes
imperative	n/a	yes	yes
obligatory	n/a	yes	yes
urgent	yes (fut.)	yes	yes
vital	yes (fut.)	yes	n/a
important	no	yes	yes
necessary	n/a	yes	yes

Note. K & K = (Kiparsky & Kiparsky, 1970), Cornilescu = (Cornilescu, 2003), Léger = (Léger, 2006), n/a = non-attested, fut. = future reference.

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Profiling the Use of Attitude Markers, Boosters and Hedges in Academic Written Production of International Student Mobility Participants

Sanja Marinov Vranješ¹, Mirna Varga²

¹ University of Split, Croatia

² University of Osijek, Croatia

ABSTRACT

Background: Motivated by the growing interest in the impact of study abroad programs on language development, the present research addresses a gap in the literature by examining the often-overlooked role of metadiscourse markers in writing.

Purpose: The study explores the impact of study abroad on the use of attitude markers, boosters, and hedges in the L2 English academic writing of international students.

Method: Using a pre-test post-test within-subject design, we analysed essays written by students before and after a semester abroad to map the characteristics of their interactional metadiscourse style and assess changes in their use of these markers.

Results: The findings show a significant increase in hedges post-study abroad, indicating a shift towards a more cautious and nuanced writing style. However, no statistically significant changes were observed for attitude markers and boosters. The overall range of interactional metadiscourse markers remained limited, occasionally making lexical choices more typical of informal language rather than academic written discourse.

Conclusion: While study abroad may enhance certain aspects of language use, targeted pedagogical interventions are needed to improve academic writing. Emphasizing interactional metadiscourse markers could help students develop a more sophisticated written style, better suited to academic contexts. This research contributes to both pragmatics and study abroad literature. In pragmatics, it expands existing knowledge on the writing styles of novice academic writers, particularly by identifying potential areas for improvement related to the use of metadiscourse markers. Simultaneously, it advances study abroad literature by introducing metadiscourse as a critical, yet previously underexplored indicator of writing quality. By highlighting the importance of these linguistic features, this study opens new avenues for both theoretical inquiry and practical applications in enhancing the academic writing skills of international students.

KEYWORDS

interactional metadiscourse, attitude markers, boosters, hedges, L2 writing development, study abroad, international student mobility

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Correspondence:
Sanja Marinov Vranješ,
smarinov@efst.hr

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INTRODUCTION

The turn of the millennium marked a significant rise in student mobility in higher education (Coleman, 2006). Surge in students studying abroad has spurred interest in research, highlighting benefits such as personal growth, cultural exposure, civic engagement, and improved foreign language skills (Kingerer, 2015; Pérez-Vidal, 2014). Study abroad (SA) con-

text has been commonly viewed as particularly beneficial to foreign language learning as the language is experienced in institutional and social settings, leading to natural acquisition. Unlike foreign language learning at home (AH) that primarily develops declarative knowledge, SA facilitates the practical use of the language, enhancing procedural knowledge and automation of language use (DeKeyser, 2010). The SA context is believed



to facilitate rapid and effortless language acquisition (Xu, 2019), supported by empirical evidence of measurable linguistic gains (e.g. Yang, 2016). However, SA experiences may not yield uniform benefits for all participants, as shown by studies reporting mixed results regarding different aspects of language development (Tseng et al., 2021; Varela, 2017; Xu, 2019). Even a cursory overview of previous research may indicate that the SA context provides a fertile ground for research on foreign language development, particularly some areas of which oral production has naturally been a major research topic (Borràs & Llanes, 2019). By contrast, examining the impact of the SA setting on L2 writing has remained a rather neglected research domain (Borràs & Llanes, 2019; Pérez-Vidal & Barquin, 2014) and has been mostly focused on measuring lexical and syntactic complexity, accuracy and fluency (Borràs, 2023; Pérez-Vidal & Barquin, 2014), pointing to generally positive impacts of the SA experience on writing proficiency, though not necessarily in all measures examined (Borràs & Llanes, 2019).

Despite these valuable research insights on L2 written development, the impact of the SA context on the use of metadiscourse in student academic writing has, to the best of the authors' knowledge, escaped the SA research focus. Metadiscourse is a cover term for linguistic resources used to organise the content or convey a writer's stance towards it and the audience (Hyland, 2004). Thus, metadiscourse is key to building argumentation as it allows writers to establish a position towards the content they are writing about and engage with readership in a rhetorically appropriate manner and has received considerable research attention, particularly from the L2 writers' perspective (Hyland, 2005). Nevertheless, knowledge regarding the use of metadiscourse in L2 academic writing within the SA setting remains limited. Therefore, this study aimed to investigate whether the SA context, specifically a one-semester sojourn abroad program in an English as a medium of instruction (EMI) context, influenced Croatian university students' use of interactional metadiscourse markers (hedges, boosters, and attitude markers) in their essay writing.

Specifically, our research aims to compare the use of hedges, boosters, and attitudinal markers in students' argumentative essays before and following a semester-long SA. The three metadiscoursal functions were selected given their saliency in the interactional dimension of metadiscourse, as attested by research on postgraduate student writing (Hyland, 2004) and research paper writing (Hyland, 1999). Additionally, they are broadly concerned with stance-taking which constitutes a crucial aspect of argumentative writing (Ädel, 2006). The purpose of the study is twofold. The comparison will allow us to explore the potential impact of the SA learning context on L2 written development concerning the features under study. The findings are expected to start filling the existing gap in research on the use of metadiscourse by L2 students participating in study abroad education and possibly initiate a rather underexplored strand

in metadiscourse literature. Against this background, our study is guided by the following research questions:

RQ#1: How do university non-language majors use attitude markers, boosters, and hedges in argumentative essays written in English as a foreign language (EFL) prior to their SA experience?

RQ#2: What changes, if any, occur in the use of attitude markers, boosters, and hedges in non-language majors' argumentative essays written in EFL after a semester of SA in the EMI environment?

Given the research scope, we first outline a broad overview of research on L2 written development in the SA learning context. This is followed by a more extensive account of the use of metadiscourse in L2 writing as the main target of the present research.

LITERATURE REVIEW

L2 Written Development in the SA Context

Considering that "student writing is at the centre of teaching and learning in higher education" (Hyland, 2013, p.55) and that writing proficiency is an important segment of overall L2 proficiency (Pérez-Vidal & Barquin, 2014), examining the impact of the SA setting on students' academic writing competences is of paramount importance which extends the scope of language courses. As noted above, one of the significant findings of SA research is that language skills improvements do not show uniform developmental trajectories. For instance, comparing SA students' development in oral and written production, Xu's (2019) meta-analysis documented that SA settings contribute more to oral proficiency gains. The findings indicated that SA had a greater effect on the development of oral complexity compared to written complexity. Additionally, study abroad had a more substantial impact on lexical complexity than on syntactic complexity, with both effect sizes being small. This is not surprising since research (Ortega, 2003) showed that significant improvements in the syntactic complexity of L2 writing require at least one year of college-level instruction. This has been confirmed by Serrano et al. (2012) who found that SA participants' oral production improved after one semester of SA while written production progressed more slowly with observable changes occurring only after the second semester.

Exposure to formal writing instruction in the SA setting has been reported as an additional factor contributing to L2 written development. For instance, Sasaki (2007) compared the changes in writing development between a SA group and an AH group of Japanese students and found that the SA group significantly increased their overall composition scores as well as writing fluency 1 year following the SA ex-

perience. SA students attributed noticeable improvements in their writing proficiency to participation in writing classes, more frequent written assignments at foreign institutions as well as increased speaking fluency. By contrast, composition scores and writing fluency of the AH group decreased over the same period. Students attributed their lower achievements to a decreased number of EFL classes and thus fewer opportunities to practice writing skills as well as to some context-related social activities they were engaged in.

Importance of writing instruction for SA students' proficiency changes has also been underscored by Borràs (2023) who set out to investigate whether the English as a lingua franca (ELFSA)¹ experience may be as beneficial as the traditional SA (in countries where the target language is the official language) for L2 written development. The study found that both contexts similarly enhanced students' writing skills. The findings suggest that both anglophone and non-anglophone settings can effectively improve students' language proficiency, provided they have institutional support and actively engage in language learning opportunities. Mere immersion in the SA context alone may not suffice for writing skill improvement. This was also documented by Storch (2009) who examined academic writing development of non-language majors after a semester-long SA. The lack of improvement in grammatical accuracy and complexity and in academic vocabulary use is attributed to the short duration of stay and assignments that focused more on content knowledge than on language accuracy.

Metadiscourse in Academic Writing

Contemporary approaches to academic discourse rest upon the notion that the academic text is primarily a persuasive instance of writing characterized as a form of social interaction between writers and readers (Hyland, 2005). This perspective has yielded a variety of explanatory frameworks aimed at exploring the interactive dimension of an academic text, e.g. evaluation (Hunston & Thomson, 2000); metadiscourse (Hyland, 2005); stance (Biber, 2006); stance and engagement (Hyland, 2005), etc. Metadiscourse has become one of the most prominent pragmatic constructs used to examine genre-specific discourse, as attested by the exponential research growth (Pearson, 2023). Based on the underlying idea that communication involves not only conveying information but also expressing our stance toward it, metadiscourse has been commonly conceptualized as an overarching term for a wide spectrum of linguistic devices used to organize a coherent stretch of discourse, engage the audience and evaluate the content from multiple perspectives (Hyland, 2005). This was operationalized in Hyland's (2005) interpersonal model of metadiscourse

which has been well-documented as one of the most influential frameworks in research on academic metadiscourse (for a systematic overview of major metadiscourse models, see Pearson, 2023).

The model is functionally based and it broadly draws on the distinction between interactive and interactional dimensions of interaction (Hyland, 2005). The interactive dimension deals with a writer's organization of the discourse with the ultimate aim of producing a coherent, meaningful, and persuasive text. It encompasses several functional categories, each including a set of lexico-grammatical devices performing distinct metadiscoursal functions. The interactional dimension, which is the focus of our study, signals the way writers evaluate or comment on the content, engaging readers to become implicit participants in the unfolding text. Several sub-categories realize the interactional strand, three of which are relevant to our study. Hedges indicate the level of certainty writers wish to attribute to their claims signalling that the claims are to be taken as opinions rather than facts (e.g. *may*, *perhaps*). Boosters are used to underscore writers' confidence in the claims they make (e.g. *certainly*, *undoubtedly*), while attitude markers express affective rather than epistemic stances toward the propositions and encompass devices that signal interest, surprise, (dis)agreement, etc. (e.g. *surprisingly*, *significant*).

Despite its well-established position in examining interaction in particularly academic writing, metadiscourse remains a fuzzy concept and hardly possible to fully account for (Hyland, 2017). One of the factors contributing to its fuzziness is possibly an infinite number of ways attitudinal or epistemic meaning can be expressed in a language, which makes it possibly an open-ended category. An additional problem is the multifunctionality of devices that may perform both metadiscoursal and propositional functions, the identification of which is rather context-dependent. This suggests that metadiscourse is not only a linguistic but also a rhetorical and pragmatic concept inseparable from the situational context in which it is used (Hyland, 2005). Research has revealed that the use of metadiscourse varies depending on the rhetorical purposes of distinct genres, distinct target audiences, and the way interactions are established and constrained by genre specifics (Hyland, 2005). While research paper writers need to present new knowledge claims cautiously, with varying degrees of commitment, university textbook writers are not particularly concerned with qualifying their statements as textbooks primarily deal with a transfer of factual disciplinary knowledge (Hyland, 2005). Linguistic choices in the use of metadiscourse may also be culturally variable, shaped by a wider sociocultural background (Vold, 2006). As a way of illustration, English ac-

¹ Köylü (2016, 2021) introduced the term 'English as a Lingua Franca in Study Abroad' (ELFSA) to differentiate between traditional study abroad programs, where students reside in a country where their target second language (L2) is the official language, and international student mobility experiences, where English is used as a lingua franca in the host country, and academic instruction is delivered in English as the medium of instruction.

ademic writing is characterized by a more prominent use of hedging strategies as compared to academic writing conventions in other languages (e.g. Varga, 2016; Šinkūnienė, 2011; Vold, 2006). The implication that L2 writing may be influenced by L1-specific ways of metadiscourse use is important for L2 writers as it underscores the significance of mastering the rhetorical conventions of academic English, particularly when they diverge from their L1.

As the present study addresses undergraduate writing, the section that follows focuses on previous research on the use of metadiscourse in student writing.

Research on Metadiscourse in L2 Student Writing

Writing successful academic texts largely depends on achieving textual coherence and cohesion as well as expressing stance in an academically appropriate manner (Yoon & Römer, 2020). However, understanding the role of metadiscoursal functions in constructing argumentation may be particularly challenging for student and novice writers (Aull & Lancaster, 2014; Lee & Deakin, 2016), especially L2 writers who may struggle to reach native-like competence (Yoon, 2021). Therefore, in an attempt to provide meaningful corpus-based pedagogical instruction, researchers have focused on examining the use of metadiscourse in student writing, particularly the advanced-level one, which along with L1 writing, has been assumed to serve as a better target norm than professional, published writing (Pearson, 2023; Yoon & Römer, 2020).

Research on the use of metadiscourse in L1 and L2 student writing has shown that L2 writers are generally more likely to employ fewer metadiscoursal devices as compared to their L1 peers (Vakanjac Ivezić, 2024; Yoon, 2021). For instance, Yoon (2021) explored the use of interactional metadiscourse in the essays written by East Asian EFL students with different L1 backgrounds and compared it with that of L1 students. Regardless of L1 background, L2 writers used fewer hedges than their L1 counterparts, which resulted in higher frequencies of assertive claims in their essays. Another distinct feature of L2 writing was the overuse of reader pronouns which may be indicative of L2 students' socio-cultural backgrounds. Distinct patterns of L1 and L2 use of metadiscourse could be related to educational contexts with L1 students likely being exposed to more writing instruction and practice, which enhanced their skills in the use of metadiscourse.

Students' L2 proficiency level has also been recognized as an important factor affecting the use of metadiscoursal devices in academic writing. Despite a general assumption that the use of interactional metadiscourse significantly contributes to more successful student essays (Lee and Deakin, 2016), studies have shown mixed results (Yoon, 2021). Aull and Lancaster (2014) followed the developmental trajec-

ries of stance-taking patterns used at different educational stages. They examined the use of stance markers in argumentative essays of incoming first-year university students, advanced-level students and in those of professional academic writers. The findings showed that beginning students overused boosters and underused hedges as opposed to more advanced student writers and professional writers who preferred expressing stance with caution and tentativeness rather than assertiveness. Additionally, advanced-level student essays were characterized by a wider variety of hedges and boosters, which resembled expert-like writing. Lee and Deakin (2016) similarly found that L2 students who wrote higher-rated essays used interactional metadiscourse in a manner comparable to successful L1 students. In contrast, students with lower-rated essays often relied on unmitigated claims, which made their writing less convincing and effective, ultimately impacting the overall quality. Carrió-Pastor (2021) explored the use of metadiscourse in undergraduates' essays at different language proficiency levels and found a progressive use of metadiscoursal devices which indicates that pragmatic competence increases with the increase of overall linguistic knowledge. However, Yoon's (2021) findings showed no significant differences in the occurrences of interactional metadiscourse markers depending on students' proficiency levels.

As previously noted, research on the impact of the SA learning context on the use of metadiscourse in written production has been rather scarce, with the exception of Herraiz-Martínez's study (2019). The author investigated the impact of EMI on students' development of hedges in writing motivational letters. The findings showed no significant improvement in students' use of hedges which might be related to the specifics of the EMI context, including the lack of explicit instruction on the use of hedging strategies. As for the pedagogical implications arising from this line of research, there is a general agreement that L2 students should be provided with more explicit instruction and more learning opportunities to expand their often limited use of metadiscoursal devices, which may enhance their L2 pragmatic competence (Carrió-Pastor, 2021; Lee & Deakin, 2016; Yoon, 2021).

METHOD

Participants

The language samples for this study were collected from twenty-two Croatian students, both graduate and undergraduate, who were studying economics and business. These students spent a semester abroad through the Erasmus+ mobility program in one of the following countries: Austria, Bulgaria, Czechia, Italy, Poland, Portugal, Spain and Sweden, where they were exposed to EMI and ELFA environments. Although our study focuses on non-language majors and the ELFA setting, for the sake of brevity, we will

refer to it simply as SA in the remainder of the text. On average, students took between 2 to 7 content courses, with only one enrolled in English for academic purposes course, and none in any academic writing courses at their host universities. Most students reported primarily engaging in oral assignments, while written assignments were minimal.

At the time of the study, all participants were experienced language learners with at least 14 years of English learning and had passed their A-levels at a B2 proficiency level. They were no longer enrolled in formal English classes but had previously taken mandatory Business English courses during their first and second years of study. During that time they did not participate in any formal academic writing courses.

Materials and Instruments

The analysis of the use of the selected metadiscoursal devices was performed on a corpus of 44 argumentative essays. Argumentative essay involves conveying opinions and adopting a particular stance toward the content, essentially encompassed by the metadiscoursal functions under study (Ädel, 2006). It also represents one of the major genres in university-level writing and is one of the most frequent types of writing in international proficiency tests (Adel, 2006; Pérez-Vidal & Barquin, 2014). Given its significance in the academic setting and society in general (Ädel, 2006) justifies our decision to use it as the main focus of our study.

Samples of respondents’ language production were collected before and after the study abroad period, which means that the corpus contains two sub-corpora, each made up of 22 essays (Table 1).

Table 1
Corpus Size

Corpus	No. of words	No. of essays	Average length
pre-SA corpus	10902	22	495.55 (SD = 97.50, min = 323, max = 774)
post-SA corpus	10516	22	478.00 (SD = 95.64, min = 320, max = 775)
Total	21418	44	

Note. “No. of words” refers to the total word count of all essays comprising each corpus. “Average essay length” is calculated by dividing the total word count by the number of essays per corpus.

The following two essay tasks were used to elicit written production:

- (1) pre-SA: Croatia has been a full member of the European Union since 2013. This membership has its advantages and disadvantages. Discuss and express your opinion;
- (2) post-SA: In 2016 the so-called Brexit referendum took place where the United Kingdom voted to leave the European Union. The UK is currently undergoing the Brexit negotiations. What are the potential consequences of the UK leaving the EU for the country itself (the UK) and what are the consequences for the EU? Discuss and express your opinion.

Although it is generally accepted that tasks should remain the same for comparability, researchers often choose different topics for convenience, adapting to the specific SA program and sample involved (e.g., Borràs et al., 2023). Our respondents’ shared field of economics allowed us to design two matching essay tasks for the pre-test and post-test, both targeting the same semantic field. This approach aimed to mitigate the negative effects of task repetition and avoid the demotivating effect of writing on the same topic twice.

Procedure

This study employs a pre-test post-test within-group comparison design, which enhances reliability by minimizing the influence of individual differences (Xu, 2019).

On each of the two collection times (before and after SA), essay writing was completed within one hour (60 minutes) on a computer under test conditions, meaning no access to external sources was allowed. Participants were instructed to aim for an approximate word count of 500 words for their essays. The essays were subsequently coded by two raters for attitude markers, boosters, and hedges. In the absence of all-encompassing predefined lists of interactional devices and given the manageable size of the corpus, both raters coded all essays independently. As metadiscoursal functions can be context-dependent (Hyland, 2005), to increase the reliability of the coding analysis, analyses were compared and discussed until mutual agreement on each coded item was reached. The coded corpus was uploaded to the Sketch Engine², where the concordance tool was used to double-check the coding for consistency.

The essays were analysed both quantitatively and qualitatively. The quantitative analysis utilized the JASP statistical program³ to calculate the differences in the use of interactional devices between the two time periods, specifically before and after SA. Both raw occurrences and occurrences normalised to 1,000 tokens were generated. Normalisation was performed to facilitate a valid comparison between the two sub-corpora, which contained different token counts,

² Kilgarriff, A., Baisa, V., Bušta, J., Jakubíček, M., Kovář, V., Michelfeit, J., Rychlý, P., & Suchomel, V. (2014). The Sketch Engine: Ten years on. *Lexicography*, 1(1), 7–36. <https://doi.org/10.1007/s40607-014-0009-9>
³ JASP Team. (2023). JASP (Version 0.17.1) [Computer software]. <https://jasp-stats.org/>

and to allow comparison with prospective studies. Additionally, the relative frequency of occurrences per 100 tokens was calculated and employed in the statistical analysis to assess differences between the two sub-corpora. Given that the mean essay length was measured in hundreds rather than thousands of tokens, we believe this approach offers a more accessible and accurate representation of the actual number of discourse markers used by individual students. The qualitative analysis examined the specific use of interactional devices within the observed genre and population, yielding the list of all metadiscoursal devices used in our study (see Appendix).

Methodological Decisions

To obtain a broad overview of the items most frequently identified as representatives of hedges, boosters, and attitude markers in academic writing, we first consulted Hyland's (2005) taxonomy of metadiscoursal devices, as one of the most cited ones, and compared it with the final lists emerging from the empirical research on student writing, e.g. Vakanjac (2024), Yoon and Römer (2020), Carrió-Pastor (2021). In assigning the metadiscoursal functions of the lexical verbs encountered in our students' writing, we also used Biber et al.'s (1999) semantic classification of single-word verbs, particularly mental verbs (e.g. *doubt*, *mean*). None of the pre-existing taxonomies was strictly followed, though many items, particularly hedges and boosters, overlap with those taxonomized in previous studies. The final list of hedges, boosters, and attitude markers identified in the two sub-corpora is provided in the Appendix (Table 7).

In identifying the metadiscoursal functions, we faced some methodological challenges that have been repeatedly addressed in metadiscourse research (Hyland, 2005; Pearson, 2023). As previously noted, metadiscoursal functions do not depend on the form of linguistic devices but rather arise from the context in which they occur and the writer's intention for their use. This means that a simple occurrence of an item potentially functioning as metadiscourse cannot be automatically assigned a function, without examining its role in a particular context (Hyland, 2005). Though space limitations preclude outlining all cases of the multifunctional nature of items encountered, the following examples may serve to illustrate the point:

- (a) *By entering labour market, Croatian citizens **can** easily trade goods.* (E1_17)⁴
- (b) *If UK leaves EU a lot of bad things **can** happen to UK economy.* (E2_2)

The modal verb *can* has two distinct meanings in the sentences above. In sentence (a) it is used to signal one's ability to act in a certain manner (in this case, Croatian citizens to

easily trade goods), while in the second it denotes a writer's evaluation of the possibility that "a lot of bad things can happen to the UK economy." These examples illustrate the polysemous nature of *can*, i.e. its dynamic (a) and epistemic (b) meaning (Nuyts, 2001), of which only the latter can be viewed as performing a metadiscoursal function of hedging. As a consequence, only *can* in sentence (b) was included in our analysis.

In assigning the metadiscoursal functions to the nouns, we followed the syntactic criteria established by Schmid (2000) and adapted by Jiang and Hyland (2016) and Jiang and Hyland (2021). In other words, our analysis included only the nouns occurring in the following lexico-grammatical structures: N + post-nominal clause; This + N; N + be + complementing clause; This + be + N, as these have been recognized to be the most common syntactic patterns of nouns conveying interactional meanings in academic writing. Given this criterion, only *advantage* in sentence (c) was included in the analysis:

- (c) *Firstly, the main **advantage** is that Croatia is able to use the money of European Union for its infrastructure,...* (E1_17).
- (d) *Of course, as always, there are some **advantages** and disadvantages in this membership...I* (E1_2)

RESULTS

In this section, we first present the characteristics of students' essays in terms of the use of attitude markers, boosters, and hedges. Table 2 presents the raw frequencies of these interactional devices and their normalised frequencies, calculated relative to the corpus length (per 1,000 tokens). Normalization allows for meaningful comparisons by accounting for differences in corpus size. The normalized frequency (NF) for each feature is determined using the following formula:

$$NF = \left(\frac{\text{raw frequency}}{\text{total number of tokens}} \right) \times 1000$$

For instance, the raw occurrence of attitude markers is 181, and with a total of 10,902 tokens in the corpus, the normalized frequency is calculated as follows:

$$NF_{AM} = \left(\frac{181}{10902} \right) = 16.60$$

This method ensures that the reported frequencies are proportional to the overall corpus size, enabling clearer comparisons across categories and datasets.

⁴ Examples are provided as they appeared in student essays.

As can be seen, results show distinct patterns of use between two time periods. In the pre-SA corpus, attitude markers were the most frequent metadiscoursal type, followed by hedges and boosters. The results also indicate that the differences in the use of the three types of metadiscourse were not striking, particularly concerning the frequencies of hedges and boosters which were quite close. The distribution of metadiscourse in the post-SA corpus showed different patterns of use, with hedges exceeding the use of attitude markers and boosters. Additionally, compared with the pre-SA essays, results of the post-SA analysis point to higher differences in the frequencies of the metadiscourse examined.

Mapping the Use of Attitude Markers, Boosters, and Hedges

The analysis of two sub-corpora showed that student essays contained 221 metadiscoursal items in total; attitude markers comprised 109, hedges 62, and boosters 50 items. To reveal patterns of preferred use of metadiscourse examined, we present instances of attitude markers, boosters, and hedges used with a frequency of 5 and above per sub-corpus (Table 3). Additionally, a Chi-Square test was conducted to determine whether the differences in the usage of these metadiscoursal items across the two sub-corpora were statistically significant (Table 4).

Distribution of the results points to distinctive tendencies in the use of the three types of metadiscourse. Concerning the use of attitude markers, the most frequent instances were adjectives, while adverbs, verbs, and nouns were used to a lesser extent. A comparison of frequencies shows that the most frequent instances were mainly clustered around 5 adjectives (*good, important, great, bad, and big*) and the verb *hope*, with the adjective *good* being by far the most prevalent attitude marker. The remaining items were used less frequently by comparison. The distribution of attitude markers also shows that even among the most frequent group of devices, some were present only in one sub-corpus, which, compared to the distribution of most frequent hedges and boosters, was shown to be a characteristic feature of only this sub-category. By comparison, the frequencies of boosters were more balanced, with a higher number of items showing similar frequencies and no single item being dominant. Adverbs (*only, even, really*) were by far the most

frequently used boosters, while other parts of speech were used minimally. Compared to attitude markers and boosters, instances of hedges showed the highest frequencies of items, with modal verbs (*would, could, can*) being the most prevalent hedges, followed by lexical bundles (*in my opinion, from x’s point of view*), adverbs and verbs.

A final consideration at this point concerns the use of single occurrences across the three types of metadiscourse under study. The highest density of instances that were used only once in the corpus as a whole was observed in the attitude marker sub-category, amounting to 60% of all instances. This was particularly evident in the pre-SA corpus in which 41 instances occurred only once as compared to 23 single instances in the post-SA corpus. By contrast, less than 40% (19) of boosters (12 in the pre-SA, and 7 in the post-SA) and hedges (24) were used only once (9 in the pre-SA, and 15 in the post-SA).

A more nuanced analysis of particular items, notably those presented in Table 3, involved an estimate of the statistical difference in the usage of these items across the two corpora. This called for the application of a series of Chi-Square tests (Table 4). The results revealed significant differences in the usage of several items. Notable examples include “good” ($\chi^2 = 41.00, p < .001$) and “would” ($\chi^2 = 45.00, p < .001$), which exhibited highly significant shifts in frequency between the two corpora. Other items, such as “just” ($\chi^2 = 7.00, p = .008$) and “very” ($\chi^2 = 8.00, p = .005$), also displayed significant differences, albeit with smaller Chi-Square values. In some cases, no Chi-Square computation was performed due to the lack of variability between the two corpora. For example, “actually,” “could,” and “seem” had constant frequencies across both contexts, resulting in non-applicable (N/A) values for their statistical tests.

It is important to note that several items with zero values in one corpus did not show statistically significant differences. For instance, “consequence” ($\chi^2 = 0.00, p = 1.000$) and “unfortunately” ($\chi^2 = 0.00, p = 1.000$) exemplify cases where descriptive differences were insufficient to yield statistical significance. This outcome underscores the limitation of the Chi-Square test when applied to small frequencies, as low counts lead to reduced sensitivity in detecting meaningful variation.

Table 2
Frequencies of Attitude Markers, Boosters and Hedges in pre-SA and post-SA Corpora

Interactional devices	pre-SA corpus		post-SA corpus	
	Total raw occurrences	Normalised frequencies (1000)	Total raw occurrences	Normalised frequencies (1000)
attitude markers	181	16.60	149	14.17
boosters	140	12.84	115	10.94
hedges	147	13.48	223	21.21
total	468	42.92	487	46.32

Table 3*Attitude Markers, Boosters and Hedges Used with a Frequency of 5 and above in the Two Sub-Corpora*

ATTITUDE MARKERS	TOTAL	Pre	Post	BOOSTERS	TOTAL	Pre	Post	HEDGES	TOTAL	Pre	Post
good	41	22	19	only	24	9	15	would	45	10	35
important	21	13	8	even	22	14	8	think	44	19	25
great	20	16	4	really	21	5	16	could	38	19	19
bad	18	3	15	so	21	14	7	can	32	13	19
big	13	7	6	especially	19	13	6	in my opinion	19	8	11
hope (v)	12	8	4	much	19	12	7	maybe	19	7	12
hard	7	0	7	need to	12	9	3	mostly	15	7	8
have to	7	2	5	of course	11	4	7	should	15	6	9
huge	7	2	5	always	10	6	4	almost	10	4	6
just	7	6	1	just	8	5	2	certain (particular but unspecified)	10	5	5
main	7	6	1	very	8	5	3	probably	10	1	9
mean (v)	7	2	5	actually	6	3	3	may	9	4	5
unfortunately	7	7	0	completely	6	1	5	seem	8	4	4
consequence	6	0	6	definitely	5	2	3	from x's point of view	6	2	4
high	6	0	6	fact	5	2	3	believe	5	2	3
advantage	5	5	0	far	5	4	1	personally	5	2	3
slowly	5	5	0	know	5	1	4	potential (adj)	5	1	4

Table 4*Results of Chi-square test for differences in metadiscoursal item usage across sub-corpora*

ATTITUDE MARKERS	χ^2	p	BOOSTERS	χ^2	p	HEDGES	χ^2	p
good	41.00	<.001	only	24.00	<.001	would	45.00	<.001
important	21.00	<.001	even	22.00	<.001	think	44.00	<.001
great	20.00	<.001	really	21.00	<.001	could	N/A	N/A
bad	18.00	<.001	so	21.00	<.001	can	32.00	<.001
big	13.00	<.001	especially	19.00	<.001	in my opinion	19.00	<.001
hope (v)	12.00	.001	much	19.00	<.001	maybe	19.00	<.001
hard	0.00	1.000	need to	12.00	.001	mostly	15.00	<.001
have to	7.00	.008	of course	11.00	.001	should	15.00	<.001
huge	7.00	.008	always	10.00	.002	almost	10.00	.002
just	7.00	.008	just	7.00	.008	certain	N/A	N/A
main	0.00	1.000	very	8.00	.005	probably	10.00	.002
mean (v)	7.00	.008	actually	N/A	N/A	may	9.00	.003
unfortunately	0.00	1.000	completely	6.00	.014	seem	N/A	N/A
consequence	0.00	1.000	definitely	5.00	.025	from x's point of view	6.00	<.001
high	0.00	1.000	fact	5.00	.025	believe	5.00	<.001
advantage	0.00	1.000	far	5.00	.025	personally	5.00	N/A
slowly	0.00	1.000	know	5.00	.025	potential (adj)	5.00	<.001

Note. Chi-Square values (χ^2) with $p < .05$ are considered statistically significant. "N/A" indicates that the Chi-Square test was not applicable because the word's frequency was constant across both corpora, resulting in no variability for statistical computation.

Differences Between the Pre- and Post-SA Corpora

The following paragraphs address the comparison of the amount of the three observed types of interactional devices in students' essays at two observation points. To assess the normality of the difference scores (post-pre) for attitude markers, boosters, and hedges, the Shapiro-Wilk test was conducted and QQ plots were visually inspected. The results indicated that the assumption of normality was met for all

variables: attitude markers ($W = 0.954$, $p = 0.381$), boosters ($W = 0.985$, $p = 0.971$), and hedges ($W = 0.972$, $p = 0.751$) so we proceeded with a paired-samples t-test to evaluate the differences in the use of attitude markers, boosters, and hedges.

The results (Table 5) indicated a statistically significant increase in the use of hedges, $t(21) = 4.54$, $p < .001$, with a large effect size ($d = 0.968$). On the other hand, the number of at-

titude markers ($t(21) = -1.25, p = .225, d = -0.267$) and boosters ($t(21) = -1.73, p = .098, d = -0.369$) decreased, but the differences were not statistically significant. Coefficients of variation ranging from 0.41 to 0.68 indicate a moderate to relatively high degree of variability in the use of interactional metadiscourse across the two sub-corpora. The variation suggests that some categories are more consistently used by students than others. A CV of 0.41 would imply that the usage is more consistent (less varied) compared to a CV of 0.68, which would indicate greater inconsistency in how students use that particular type of metadiscourse.

To enhance the clarity and interpretability of the data, raincloud difference plots⁵ (Table 6) were generated to provide a visual representation of the differences between the results before and after SA. They include a scatter plot, box plot, and density plot, offering a comprehensive view of the data's variability, central tendency, and distribution⁶.

DISCUSSION

Responding to our first research question, the analysis showed that pre-SA essays are characterized by a rather balanced distribution of the three types of metadiscourse under study, with attitude markers showing the highest frequencies, while boosters and hedges were used to a less-

er degree. The prevalence of attitude markers suggests that L2 student writers found it relatively more important to express their attitudinal stance rather than vary a level of commitment to their claims. In other words, they were particularly concerned with conveying personal opinions and evaluations of the issues they found important, right, wrong, undesirable, etc., as in:

- 1. **Unfortunately** (AM) for Croatia, we are not so organized and we are using only a low percentage of the funds that are at our disposal. (E1_1)

A high level of affective involvement manifested through the use of attitude markers might be accounted for by the essay topic itself which has a bearing on their personal lives and which may have invoked a range of feelings, including patriotic ones, as shown in the following example:

- 2. In my opinion, EU is **the best** (AM) thing that has happened to Croatia since the civil war. (E1_9)

Personal engagement with the topic was often evident in students' choices to intensify the meaning of attitude markers through the use of boosters, which was their frequent function in students' essays, as in:

Table 5

Paired-Samples T-Test for Attitude Markers, Boosters and Hedges in pre-SA and post-SA Corpora

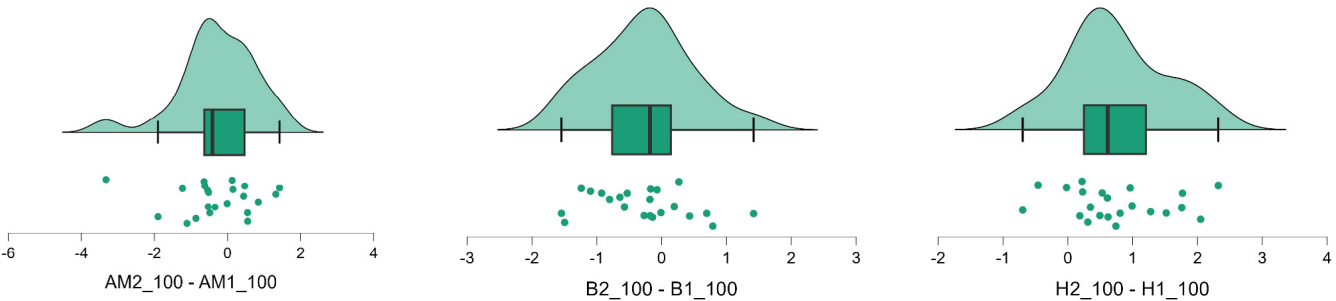
Interactional Devices	Pre SA			Post SA			<i>t</i>	<i>p</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>CV</i>	<i>M</i>	<i>SD</i>	<i>CV</i>			
attitude markers	1.65	0.67	0.41	1.37	0.79	0.58	-1.25	0.225	-0.267
boosters	1.27	0.57	0.45	1.00	0.68	0.68	-1.73	0.098	-0.369
hedges	1.32	0.72	0.55	2.07	0.92	0.45	4.54	< .001	0.968

Note. CV = coefficient of variation (CV). The pre-SA result is subtracted from the post-SA result. Values are normalised to 100 tokens.

p* < .05. *p* < .01. ****p* < .001

Table 6

Raincloud Difference Plots for the Differences in the Use of Attitude Markers, Boosters and Hedges Before and After SA



⁵ Goss-Sampson, M. A. (2024). *Statistical analysis in JASP 0.18.3: A guide for students*. JASP.
⁶ The "cloud" (above) indicates the density distribution of the data, while the "rain" (below) represents the differences in the use of devices (attitude markers, boosters, hedges) before and after SA for each individual. The box plot in the center shows the central tendencies of the data, spread, and possible outliers.

3. This is **especially** (B) **important** (AM) for young people who want to explore life in a new country... (E1_6)

A need to establish firm positions and display a high degree of conviction in the claims offered (Hyland, 2005) is reflected in the high density of boosters, such as *really*, *so*, *much*, etc.:

4. Furthermore decisions about nature environment are **really** (B) **helpful** (AM) for all of us. (E1_10)

The use of hedges was characterized by a relatively high frequency of modal verbs which represent some of the typical exponents of hedges in academic writing (Hyland, 1998). Our findings show that students mostly used *would* and *can/could* to signal that the claim is of a speculative rather than categorical nature, as in:

5. *Without good preparation it **could** (H) cause a lot of trouble in Croatian economy.* (E1_6)

Modal verb *may*, on the other hand, which along with *might*, represents a core modal for expressing hedged statements in academic discourse (Hyland, 1998; Biber et al., 1999), was used sparingly, while *might* occurred only twice in the corpus as a whole. This may indicate L2 students' insufficient knowledge of the appropriate use of modal verbs to convey a hedged stance in academic writing.

Another common feature of the use of hedges concerns students' tendency to use personalized expressions, particularly reflected in the preferred use of 1st Person pronoun with the verb *think* and the expressions *In my opinion* and *personally*.

6. **I think** (H) that is something that we need to keep and cherish if nothing else as a reminder how one little country is strong actually. (E1_5)

These explicit signals of a writer's intrusion in the text and overt expressions of their standpoint, but particularly their frequencies, are indicative of an informal and conversational rather than academic style of writing (Hyland & Milton, 1997).

Regarding our second research question, the results show different uses of metadiscoursal functions under study. The frequency of attitude markers and boosters decreased, but the difference was not statistically significant. By contrast, there was a statistically significant increase in the use of hedges which may be due to several factors. The essay topic, which was shown to contribute to writing production (Yoon, 2020), might have affected students' choices in the use of metadiscourse. More specifically, they likely felt more emotionally attached to the homeland topic which made their claims rhetorically stronger. Conversely, they might have been insufficiently informed about the Brexit topic or

not as much engaged with it as they were with the Croatian membership in the EU. This might have decreased the need to express their attitudinal evaluations and conversely increased the need to mitigate claims and express judgments in a more detached manner.

Another possibility of the increased frequency of hedges in the post-SA essays relates to the potential impact of the SA learning context on students' written production. Previous research on the use of metadiscourse both in written (e.g. research articles, textbooks, master's theses, etc.) and spoken academic discourse in English (e.g. university lectures, EAP lessons) has shown the dominance of hedges over other types of interactional metadiscourse, which points to their centrality in constructing academic argumentation with caution but also in creating classroom dynamics where politeness plays an important role (Hyland, 2005; Lee & Subtirelu, 2015). It might be assumed that due to the exposure to EMI and engagement with more disciplinary literature in English, students increased their awareness of the importance of qualifying statements in academic discourse, which resulted in a more successful alignment of their essays with L1 academic writing conventions.

Though a lack of congruent previous studies prevents direct comparisons of results, our findings may be broadly related to existing research on L2 student use of metadiscourse in academic writing. Previous research has shown that concerning the use of interactional metadiscourse both L1 and L2 student writing, particularly advanced-level L2 writing, is characterized by considerably more frequent use of hedges as compared to boosters and attitude markers (Hyland, 2004; Lee & Deakin, 2016; Vakanjac Ivezić, 2024), which corresponds to their use in research article writing (Hyland, 2005). This suggests students' awareness of the fact that despite addressing personal standpoints towards a topic, most notably in essay writing, there is a need to achieve objectivity in academic writing which is realized through the appropriate use of metadiscoursal devices. Awareness of the importance of qualifying statements, and constructing plausible argumentation with tentativeness and caution rather than assertiveness or affective engagement can be indicative of a higher level of control and mastery of academic writing conventions (Lee & Deakin, 2016).

The present results suggest that L2 students in our study did not seem to have completely mastered the academic writing requirements concerning the use of metadiscourse examined. A high density of attitude markers in the pre-SA essays denotes that expressing attitudinal evaluations was prioritized over epistemic ones, which is not particularly aligned with academic-level argumentative writing. Additionally, close frequencies of boosters and hedges in pre-SA essays show that students may have found it difficult to establish a more appropriate balance between conveying assertiveness and tentativeness in argument construction. This reflects the findings obtained in some earlier research show-

ing that compared to L1 students, L2 students exhibited a higher degree of commitment to their claims due to the lack of linguistic knowledge but possibly also some sociocultural variables (Hyland & Milton, 1997). As previously mentioned, the overuse of overt personalized expressions in the present corpus also reflects some characteristic features of L2 writing, particularly at lower levels of proficiency (Hyland & Milton, 1997).

As the post-SA essays contained significantly higher frequencies of hedges, we might assume that students' competencies in the use of metadiscourse have shown some development. Nevertheless, it is noteworthy that student essays still exhibited features that do not mirror adequate academic writing style, or upper-level writing as its prerequisite.

For instance, concerning the use of hedges, though post-SA students' writing progressed in that respect, we noticed the lack of hedges in places where their use would avoid generalizations, e.g.:

7. *This type of negotiation is (*may be) bad for every party involved since it is creating (*it seems to be creating) hostile environment for everybody included.* (E2_18)

Besides the use of metadiscoursal functions or a lack thereof, another issue concerns the use of lexical devices to perform the intended functions. Thus, the analysis shows that a vast majority of devices are not typical of academic vocabulary that is expected to be used in university-level writing. Indeed, only three items from the table above (*important*, *consequence*, and *potential*) are included in the Academic Vocabulary List (Gardner & Davies, 2014), which though representative of professional rather than student-level writing, might be taken as a general reference point for academic vocabulary (Durrant, 2016). This in turn means that in choosing lexical devices used to perform metadiscoursal functions, students opted for more general and simple vocabulary that is more characteristic of spoken register, e.g. *really*, *so* instead of their more formal alternatives, e.g. *highly*, *strongly*, *entirely*, etc. (Biber et al., 1999).

Additional traces of spoken register can be found in peculiar language choices that only support the assumption that students' control of academic vocabulary as an inherent element of academic discourse seems not to be at an adequate level, as illustrated by the following examples:

8. *Furthermore, personally, I am not a big fan of the concept of the European Union and I really think that everything is fake.* (E2_1)
9. *Personally, I would describe Croatia's journey in the EU as sweet and sour – not to everyone's taste, but generally good and well-liked.* (E1_22)

Besides limitations in the repertoire of productive academic vocabulary, a lack of lexical diversity seems to be an additional feature of students' use of metadiscourse. In other words, students rely on a rather narrow range of vocabulary as evident in limited occurrences of synonymous high-frequency devices (e.g. *good*).

Our research aligns with the idea that writing development requires more time (Ortega, 2003) and focused instruction (Sasaki, 2007), rather than relying solely on immersion in the study abroad context. Limited progress in various aspects of writing is a frequent observation in SA research, which, besides the study's duration, may also be attributed to the tendency of sojourners to focus more on developing spoken language skills than on writing (Marinov Vranješ, 2023; Köylü & Tracy-Ventura, 2022).

CONCLUSION

This study provides insights into the evolving use of attitude markers, boosters, and hedges in the academic writing of students participating in international study abroad programs. By examining changes in metadiscourse marker usage before and after a one-semester study abroad experience, this research highlights the nuanced ways in which international education influences written language development. The significant increase in the use of hedges post-study abroad suggests a shift towards a more cautious and sophisticated academic writing style, reflecting students' growing awareness of academic discourse conventions. However, the persistence of a limited range of metadiscourse markers, often resembling those found in spoken rather than written academic discourse, underscores the need for more targeted pedagogical interventions.

Nonetheless, these findings should be interpreted with caution due to several limitations. The study's small and homogenous sample, drawn from a single institution and study major, limits the generalizability of the results. Future research should aim to include larger and more diverse samples from various educational contexts to enhance the broader applicability of the findings. Additionally, the lack of existing research on interactional metadiscourse markers in study abroad contexts highlights the necessity for further exploration in this area. Another methodological constraint concerns evaluation periods which included only two intervals, before and after the SA experience. The possible language gains of the SA might have been more accurately captured if student writing was evaluated during the SA, i.e. while students were still immersed in the L2 academic context. Therefore, future SA research might benefit from a more comprehensive longitudinal design to explore more profoundly the impact of the study abroad experience on students' language production.

Moreover, while the pre- and post-SA essays were based on closely related topics, the possibility remains that topic differences influenced the use of interactional devices, particularly hedges. Future research should consider using identical topics for pre- and post-tests to rule out this variable, despite potential challenges such as task repetition and reduced motivation in expressing one's opinion on a demanding topic twice. Pedagogically, this suggests that students should be made aware that their engagement with a topic may lead to greater assertiveness or affective involvement, which should be tempered with the strategic use of hedging to reflect the expected academic writing conventions.

Based on our insights into the choice of metadiscourse devices, a possible research avenue might address the relationship between the use of metadiscourse and various components of lexical competence such as lexical accuracy, lexical diversity and lexical sophistication. Investigating this relationship could clarify whether a more advanced lexical repertoire facilitates the strategic use of interactional metadiscourse or whether these two aspects develop independently. Additionally, future research could examine whether their development follows a parallel trajectory over time or whether improvements in one domain precede and influence gains in the other. A longitudinal approach would be particularly valuable in identifying patterns of interaction between lexical growth and metadiscourse use at different stages of L2 writing development. Such insights could contribute to a more comprehensive understanding of how lexical competence supports the development of argumentation in academic texts and inform pedagogical approaches

that integrate vocabulary development with metadiscourse awareness.

The study's findings have important implications for teaching academic writing at home institutions, especially in preparing students for study abroad experiences. Students could thus be encouraged to take advantage of academic writing courses at host institutions. Educators should emphasize the strategic use of metadiscourse markers, fostering an awareness of how hedging, attitude markers, and boosters can enhance the sophistication and appropriateness of academic discourse.

DECLARATION OF COMPETITING INTEREST

None declared.

AUTHOR CONTRIBUTIONS

Sanja Marinov Vranješ: conceptualization; formal analysis; investigation; methodology; resources; validation; visualization; writing – original draft; writing - review and editing.

Mirna Varga: conceptualization; investigation; methodology; resources; validation; visualization; writing – original draft; writing - review and editing.

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APPENDIX

ALPHABETICAL LIST OF ATTITUDE MARKERS, BOOSTERS, AND HEDGES IN PRE-SA AND POST-SA CORPORA

Table 7

Attitude Markers, Boosters and Hedges in pre-SA and post-SA corpora

ATTITUDE MARKERS	independent	right	any	sure	mainly
advantage	inevitable	sad	certainly	for sure	may
amazing	infamous	safe	complete	surely	maybe
bad	innocent	see	completely	that (adv)	might
better off	interesting	serious	definitely	the thing is	more or less
big	inviting	severe	dire	too (very)	most (of)
closed	irony	severely	do	total	most likely
complex	irrational	significantly	downright	totally	mostly
concern (n)	just	slow	drastically	tremendous	nearly
consequence	lesson	slowly	especially	very	not sure if
correctly	like (v)	smart	even	HEDGES	often
damaging	logical	special	ever	almost	partially
destructive	look forward to	spectacular	evident	argue	perhaps
difficult	main	strict	exactly	around	personally
dire	major	strong	extremely	at least	possible
disadvantage	maximised	sweet and sour	fact	believe	possibly
doubt (v)	mean (v)	terrible	in fact	can	potential
ensure	negative	thing	far	cannot	potentially
fake	negatively	threatening	fully	certain	predict
fan (n)	neutral	toxic	have to	consider	pretty
fast	neutralised	true	highlight	could	probably
fear	nice	uncertain	highly	fairly	see
feel	normal	undeniable	just	feeling	seem
good	noticeably	unfair	know	from x's point of view	should
great	numerous	unfortunately	much	generally	some would say
happy	perfect	unique	need (n)	I can't say	sometimes
hard	pleased	unrealistic	need to	I don't know	suggest
harmful	plus (n)	unstable	never	imagine	suppose
have to	popular	useful	never ever	imply	tend
heavily	positive	valid	of course	in a way	think
helpful	prevalent	view (v)	only	in general	to some degree
high	pricy	well-liked	particularly	in most cases	under presumption
honestly	prime	worth mentioning	really	in my opinion	usually
hope	problem	would like	sheer	in some ways	wonder
huge	properly	wrong	should	in the global	would
important	rapidly	BOOSTERS	show	it is hard to say	
importantly	regressive	actually	so	just	
	remarkable	always	such	kind of	

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The Impact of Students' Motivational Drive and Attitude toward Online Learning on Their Academic Engagement during the Emergency Situation

Audi Yundayani ¹, Yatha Yuni ¹, Fiki Alghadari ²

¹ STKIP Kusuma Negara, Indonesia

² Universitas Jambi, Indonesia

ABSTRACT

Background: The advent of emergency remote teaching has significantly transformed the landscape of higher education through the Internet environment. The online learning environment elicits varying student engagement, apathy, and frustration. Nevertheless, digital literacy is not the exclusive factor determining students' academic participation in online learning during an emergency. Students need an extra compelling element.

Purpose: To investigate students' motivational urges and attitudes toward emergency online learning scenarios that impact their academic engagement.

Method: An explanatory research design was implemented in the research method to quantify the intensity and direction of the relationship between variables and elucidate the impact of a single variable on another. Two hundred-eight undergraduate students from a private higher education institution comprised the research's respondents. The structural equation modeling and Hayes' bootstrapping technique were employed to analyze the data further, which was collected through an internet-based poll. In addition, the Confirmatory Factor Analysis (CFA) method was employed to assess the reflective measurement models. This included the internal consistency (Cronbach's alpha, composite reliability), the convergent validity encompassed indicator reliability and average variance extracted (AVE), and the discriminant validity conducted using the cross-loadings approach and the Fornell-Larcker criterion.

Results: The research findings suggest that driven students are more inclined to participate in online learning during an emergency remote teaching scenario by actively controlling their study time and autonomously gaining a deeper comprehension of the academic content. Their active participation in online learning is further evidenced by their motivation derived from attention, relevance, confidence, and satisfaction in emergency remote teaching scenarios. The attitude towards online learning (AOL) fostered by these motivational elements had a negligible impact on the student effort. Furthermore, students residing in rural areas exhibit prevailing motivational elements, such as self-assurance and focus, that motivate them to invest time in creating and understanding educational resources. Concurrently, students residing in metropolitan regions exhibit a prevailing driving force in attention and satisfaction, resulting in a favorable disposition towards active academic participation in online learning by fostering the acquisition of time management abilities.

Conclusion: The results have implications for teachers developing teaching activities to encourage active student academic participation in online learning setting, considering the students' specific needs, backgrounds, characteristics, and abilities.

KEYWORDS

academic engagement, ARCS model of motivational factors, attitudes to online learning, self-regulated learning method

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Correspondence:
Fiki Alghadari,
fikialghadari@unja.ac.id

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INTRODUCTION

Emergency situations have altered the learning modes in higher education institutions. When they broke out, higher education institutions were forced to close their campuses and implement online learning programs (Roman & Plopeanu, 2021; Rusli et al., 2020). All governments globally proposed a lock-down program that would initially alleviate the adverse impact and maintain the national educational standard (Churiyah et al., 2020; Zhang et al., 2020). This circumstance demonstrates the learning system's preparedness to adapt to the novel circumstances. Through technology immersion, the evolving learning environment is utilized as an opportunity to enhance the quality of the learning process. The transformational impact of the emergency situations on higher education generates encouraging thoughts and also concerns. Especially focused on the move to online learning and its attendant issues.

Online learning is becoming more prevalent in universities across the globe. The form of learning has evolved dramatically in the Republic of Korea, despite the fact that the vast majority of students have no prior experience with blended learning, online learning, or distance learning (Stewart & Lowenthal, 2022). It will become increasingly difficult for those who are still accustomed to traditional learning methods to cope with the emergency situations (Guo & Chen, 2020). For example, in South Africa, learning has begun to be carried out using technology media such as learning management systems. However, learning is rendered ineffective due to the lack of resources connected to internet facilities (Mhlanga & Moloi, 2020), which many people in rural areas face (Dube, 2020), so they are more likely to experience difficulties in online learning and a negative impact on their academic achievement (Adarkwah, 2021). In Ghana, a similar situation occurred. Online learning in higher education received a positive response from students but was hindered by students' inability to interact with technology (Agormedah et al., 2020). Moreover, at least 62 countries reported a decrease in students' performance in the learning process due to online learning, owing to a lack of computer skills and the assumption that the workload would increase as a result of online learning (Aristovnik et al., 2020). Students' psychological well-being is also negatively affected by the implementation of online learning during emergency situation in China (Wang et al., 2020). Although online learning has become a familiar and necessary adaptation in higher education worldwide, its effectiveness is often hampered by technical problems, inadequate resources, and a demanding learning curve as the elements that can change students' general well-being and academic achievement.

In Indonesian context, Ministry of Education responded to the emergency situation by implementing integrated online learning, also known as 'Merdeka Belajar' program, as soon

as the integrated online learning was discovered (Abidah et al., 2020), and impacts the growth in broadband traffic of up to 16%, mainly due to a sharp increase in the use of online learning platforms. The learning objectives that facilitate students' interaction with their learning environment remain unchanged due to the concept of 'Merdeka Belajar', which was implemented in response to an emergency learning situation. The learning process continues to enable students to acquire a new or profound comprehension of a subject that has the potential to alter their thoughts, emotions, or behaviors (Chew & Cerbin, 2021; Wang & Jou, 2023). Moreover, students' capacity to adjust to the learning process and their capacity for critical thinking, communication, collaboration, creativity, and character are still crucial (Thornhill-Miller et al., 2023). Nevertheless, many Indonesian students argue that they are struggling to adapt to online learning. They reveal technophobia and are normally unable to use technology. Some of them have demonstrated negative attitudes towards the online learning process. This may be due to a lack of technological self-confidence, expertise in the handling of technological devices, or the lack of the requisite facilities for the online learning process, including internet connection problem (Rusli et al., 2020; Yundayani et al., 2020). The emergency situation also makes it more frustrating (Wijaya et al., 2020). They experience the ups and downs in the online learning process because motivation plays an important role in efforts related to student persistence, including psychological and personality performance.

The educational landscape in Indonesia is confronted with distinctive obstacles, including the rapid transition from traditional face-to-face classes to online learning, as well as the country's extensive geography and remote regions. Indonesia's educational challenge is significant due to the extensive geography and the presence of numerous remote areas (Luschei & Zubaidah, 2012). Nevertheless, students continue to confront challenges in the Indonesian context due to the abrupt transition from traditional face-to-face classes to online learning and the required rapid adaptation to the new situation (Fatoni et al., 2020; Hanafi et al., 2021). Furthermore, they undergo stress and pressure as a result of this transition. Students worldwide were subjected to unprecedented pressures despite the educational sector's resilience during the pandemic (Karim & Alam, 2021). The location of their online learning also influenced students' attitudes toward online learning. The learning situation, infrastructure, and context of their home learning situation were among the numerous factors influencing their active or non-active engagement in online learning. However, the relationship between students' academic engagement during the emergency and their motivation and attitude toward online learning has not yet been examined.

The current study responds to the need for a better understanding of the role of students' motivation and attitudes toward online learning during the emergency impacting on the students' academic engagement. Also, researchers intend to understand the framework for aligning student motivation to academic engagement in their online learning attitude during the emergency situation, especially considering students' home learning locations (rural versus urban).

RQ: What is the impact of students' motivational drive and attitude toward online learning on their academic engagement during the emergency?

LITERATURE REVIEW

Online Learning

In the online learning environment, there appears to be a lack of regular communication between students and teachers, as well as students and students. In emergency learning situations, adjusting learning modalities and processes and various uncontrollable variables, such as the home learning environment, learning time, and the barriers teachers confront in observing students' engagement, make it more difficult. As a result, it becomes exceedingly challenging. Furthermore, location is also a factor that affects learning goal achievement. The online learning milieu has now fully embraced student-oriented methods that focus on skills and activities that equip students with questioning skill, discussing concepts, offering alternate views and cultivating analytical or original thought (Danesh & Shahnazari, 2020). It necessitates the development of a positive attitude toward online learning among students. Students' motivation and academic engagement are two of the most important factors in determining their overall academic performance.

Student engagement is facilitated by online learning environments' distinctive challenges and opportunities. Online courses might challenge traditional student engagement developed in face-to-face courses (Cole et al., 2019). It affects student engagement in online courses that may be more complex and ambiguous to comprehend than those in classrooms with in-person instruction. However, student engagement is critical to student learning, especially in online environments where students often feel isolated and disconnected. It refers to the time and effort students spend in academically oriented activities and the efforts institutions commit to using appropriate educational practices (Lu, 2020; Shin & Bolkan, 2021). It also decreases the sense of alienation and increases student academic success in online courses. In addition, engaged students are likely to engage with the course and take responsibility for their learning. It causes that developing students' academic engagement in

the current knowledge-seeking environment has become critically important (Chukwuedo et al., 2021).

Student Engagement

Engaged students are more likely to succeed; however, modification of instructional methodologies is necessary to cultivate this engagement. Learning modalities and processes must be modified. They include variety of uncontrollable variables, such as the home learning environment, make online learning during emergency situations more challenging, and a variety of uncontrollable variables, such as the home learning environment, make online learning during emergency situations more challenging (Danesh & Shahnazari, 2020). Nevertheless, the transition to online learning is not without its barriers. This also affects students' capacity or endeavor to engage in academic learning throughout their entire school experience, which includes the completion of homework, assignments, and credits for graduation (Appleton et al., 2006; Henrie et al., 2015). Academic performance can be adversely affected if students cannot maintain focus or motivation. This underscores the significance of comprehending and facilitating students' engagement in all facets of their learning. This is the point at which students' academic well-being is influenced by their engagement in enhancing their self-direction in learning.

Factors Affecting Online Learning

Determining engagement in online learning and academic performance depends much on student attitudes and motivation; nonetheless, geographical location and technology constraints could influence these interactions. A previous study by Aguilera-Hermida (2020) reported that student attitudes and motivation in online learning played a crucial role in student cognitive engagement and academic success. However, the study found that students' motivation and cognitive engagement decreased due to the emergency online learning situation. Students expressed their positive motivation and attitude to online learning as they were used to get involved in the online environment (Baranova et al., 2021). Besides, student attitudes towards technology-based self-learning contributed to student acceptance of technology and technical self-efficiency (Pan, 2020). Experience in online activities encouraged students to participate in online learning actively. They adapted to the online learning process quickly, even though they had these new learning modes.

With regard to students' online learning location, Vanan and Subramani (2015) contended that there were no major differences in student attitudes towards their technology acceptance based on students' geographical location in rural or urban areas. Furthermore, Chung and Mathew (2020) found that student satisfaction was a key factor in their motive for engaging in online learning even though their online

learning location did not have a significant relationship with online learning satisfaction. However, Nistor (2013) claimed that students' online learning location significantly impacted their positive attitude toward online learning. Students appear to be habituated to adjusting to technological advancements due to their status as digital natives; this familiarity influences their level of motivation to participate in the online learning process. The drive for students to participate in online learning is, nevertheless, significantly impacted by technological constraints. Meanwhile, Ferrer et al. (2020) revealed that students' attitudes to online learning mediated the relationship between their motivation and their engagement in the online learning environment.

METHOD

Research Design

This study employed an explanatory research design to measure the strength and direction of the relationship between variables while also attempting to explain the effect of a single variable on another (Edmonds & Kennedy, 2016). Furthermore, this research design enables the researchers to explore the topic in various depths, depending on the re-

search question. Through positive encouragement for the online learning environment's progression, higher education students have more rights to engage actively in the academic field during the online learning, encouraged by their attitudes. Figure 1 depicts our study model, which argues for the reasoning of the research questions investigated.

Participants

The participants in this study were two hundred and eight students. Academically, they represented a range of educational backgrounds in higher education, including first-year students, sophomores, and juniors. They were recruited for this study for a variety of reasons, including (1) their location during online learning in the emergency, (2) the challenges they encountered while learning online during an emergency situation, and (3) their willingness to participate voluntarily in this study. The location of students' learning is a factor that influences the attainment of learning objectives. The current study was carried out in Indonesian private higher education institution settings. The institution was chosen because of a phenomenon relevant to the current study, namely the impact of online learning in the emergency on students' academic engagement since the institution shifted the learning mode.

Figure 1

Research Model

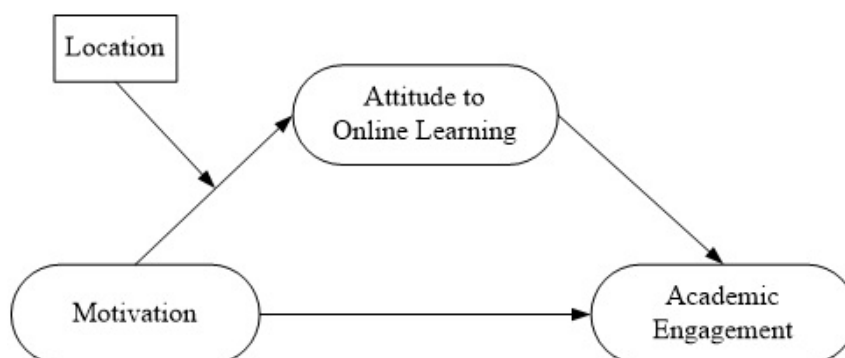


Table 1

Demographic Characteristics

		Number (persons)	%
Gender	Male	65	31.25
	Female	143	68.75
Age	Below 19 years old	9	4.33
	19 years old and above	199	95.67
The use of learning devices	Computer PC	7	3.3
	Laptops	95	45.7
	Smartphone	106	50.9
Students' online learning location	Rural areas	116	55.7
	Urban areas	92	44.23

Table 1 summarizes the demographic characteristics of the research participants. Responses to the online survey resulted in 208 functional responses to the research model in Figure 1 as data preparation.

Instruments and Data Collection

The questionnaire was designed to collect adequate data through an online survey using a positive statement. It was developed based on the foundational theories of students' motivation (Keller, 2010), academic engagement (Appleton et al., 2006; Cohen & Henry, 2019; Fredricks & McColskey, 2012; Guay, 2022; Reeve & Tseng, 2011; Zimmerman, 2013), and attitude to online learning (Ferrer et al., 2020; Loyd & Gressard, 1984). Each dimension consisted of four to ten statements determined by the research objective. The dimension is reflected in the following statements: I strive to establish connections between assignments and time spent on tasks; I am genuinely inquisitive about the material we are studying; I provide recommendations for improving online classes; and I enjoy the online learning process.

A back translation process was implemented to guarantee the accuracy and cultural relevance of the research questionnaire. This process entailed comparing and reviewing to identify discrepancies, inconsistencies, or misunderstandings. This approach improved the questionnaire's reliability and validity by reducing translation-related biases and ensuring respondents comprehended the questions as intended.

The scale of measurement was the interval. Students were free to determine their number for each scale statement in the range of more than 0 and not more than 4. The large-scale survey was distributed to students using a questionnaire through the Google form to undergraduate students with active college enrollment. Students filled out three sets of instruments, namely: student motivation scale, academic engagement scale, and attitude to online learning scale.

Student Motivation Scale

Student motivation was determined using the well-established scale of Attention, Relevance, Confidence, and Satisfaction (ARCS) developed by Keller (2010). Students should pay attention to their good attitudes by asking questions, engaging, and generating mental challenges. It can be seen as a mixture of behavioral and cognitive processes. The next aspect is relevance is coming next. It is known as something that has sparked students' attention when they see the value of something they have for their needs. On the other hand, confidence is a feeling of belief that students are willing to achieve learning goals by encouraging them to believe and feel that they can excel and monitor their success. Also, satisfaction is like a firm trust that relates to a good feeling that students get when they obtain what they want

or do what they want to do by enhancing achievement with internal or external rewards.

Academic Engagement Scale

The Academic Engagement Scale (AES) refers to the ability or effort to participate in academic learning during a student's entire school experience. It includes time on assignment and credits earned for graduation and homework completion (Appleton et al., 2006; Henrie et al., 2015). The items are adapted to reflect the online learning environment based on effort regulation, time management, and elaboration. In this study, we tested the effort regulation based on the Self-Regulated Learning (SRL) method suggested by Zimmerman (2013). It was described as the process experienced by students to properly track their behavior to achieve their learning objectives (Zimmerman & Kitsantas, 2014). In other words, Liew et al. (2011) argued that effort regulation could be described as the perceived investment of students (in time, work, and resources) committed to a mission or operation, as well as the willingness of students to make efforts and to continue to do so, even though it is not pleasant or convenient.

Time management could be seen as a behavioral regulation that involves students' willingness to conduct SRL practices. It is a significant self-regulation mechanism in which students actively control when and for how long they participate in activities considered necessary to achieve their academic goals (Wolters & Brady, 2020). Besides, time management was seen as a multidimensional process that involves setting and prioritizing priorities, short-and long-term planning, calculating time needs, tracking how time is spent, and purposely structuring or allocating time is spent (van Eerde, 2015). Elaboration is students' cognitive behavior related to adding more information to the existing body of knowledge to create a more complex comprehension, changing whole. It can be defined as an extension of a definition that involves developing an idea by adding details to extend the original basic idea. Wolters et al. (2005) argued that, for example, students are attempting to summarize the content in their terms, to connect new concepts to prior knowledge, and to incorporate information from various sources. Also, an in-depth approach to learning is closely linked to students undertaking growth techniques that can take place through self-study, discussion, note-taking, or responding to questions.

Attitude to Online Learning Scale

The Attitude to Online Learning Scale (AOLS) was constructed by collecting statements comprising attitudinal components that cover emotional, cognitive, and behavioral aspects (Ferrer et al., 2020; Loyd & Gressard, 1984). The emotional aspect represents technical anxiety, concern, or apprehension when using technology and digital skills learning. It could be seen as a student's sense of their own

ability to use online technologies to boost learning. Besides, the cognitive component relates to technical self-confidence and the capacity to perform digital tasks. It can be described as students' beliefs and opinions about online learning technology. Moreover, the behavioral factor applies to technical patterns, which are like dealing with technology. It explains the intentions of students concerning the use of various elements of the accessible online learning environment.

Data Analysis Techniques

The data analysis was carried out in two phases. First, data analysis used Confirmatory Factor Analysis (CFA) method to evaluate the reflective measurement models, which included the internal consistency (Cronbach's alpha, composite reliability), the convergent validity that covered indicator reliability and average variance extracted (AVE), and discriminant validity by the cross-loadings approach and the Fornell-Larcker criterion (Hair Jr et al., 2016). The CFA analysis performed two structural models. The model is differentiated according to the first or second-order factors of academic engagement. The variables analyzed include academic engagement, AOL, and motivation variables. In the analysis, the two models' motivation variables were analyzed based on four reflective factors, namely attention, relevance, confidence, and satisfaction.

The analysis for the second stage was evaluating the structural model of the second-order factor of variables. Hair Jr et al. (2016) stated that the analysis of a model based on the second-order variable was better than the first in explaining the relationship between research variables because it

operated at a higher abstraction level. We tested the path diagram using structural equation modeling (SEM) through two procedures in the second stage. The procedures of the structural model evaluation were Collinearity assessment and significance of path coefficients. The conditions were of variable importance in the projection (VIP) on Collinearity evaluation, which is more than 0.20 and less than 5. Meanwhile, for the evaluation of size and significance of path coefficients, we used the SmartPLS software to analyze the data and the bootstrapping approach to test the significance of AOL mediation and the moderated mediation effect by study location (urban and rural areas) during the emergency situation.

RESULTS

Measurement Model

We tested the research model's measurement component to assess the fitness of the model and the psychometric properties of the sample designs, including reliability and factorial validity. The CFA model tested covered (1) the first-order academic engagement model (AE) in which all elements were loaded into a single latent and the first-order Attitude to Online Learning (AOL) component; (2) the second-order three-factor academic engagement model included in each effort regulation, time management and elaboration, and of the first-order AOL factor.

The first model fit analysis findings suggested that composite reliability was more than 0.7 (0.929 for academic engage-

Table 2

Descriptive Statistics, Cronbach's Alpha, Composite Reliability, and AVE

Independent variable	Mean (Standart Deviation)						Cronbach- α	Composite Reliability	AVE
	1	2	3	4	5	6			
Attention	2.867 (.784)	2.934 (.762)	2.991 (.711)	3.083 (.564)	3.283 (.575)		.829	.878	.590
Relevance	3.193 (.639)	3.074 (.660)	3.106 (.614)	3.169 (.618)			.909	.936	.785
Confidence	2.614 (.921)	2.491 (.869)	2.870 (.758)	2.670 (.802)	2.520 (.856)		.877	.909	.667
Satisfaction	2.999 (.729)	3.395 (.579)	3.047 (.703)				.710	.838	.634
Effort Regulation	3.150 (.619)	3.189 (.632)	3.129 (.608)	3.034 (.539)			.869	.916	.718
Time Management	3.307 (.586)	3.347 (.571)					.654	.910	.741
Elaboration	3.181 (.576)	3.044 (.634)	3.216 (.586)	3.060 (.610)			.870	.850	.720
AOL	3.328 (.537)	3.475 (.527)	3.253 (.602)	3.451 (.524)	3.437 (.541)	3.616 (.464)	.890	.911	.684

Note. AVE - Average Variance Extracted; M - Mean; SD - Standart Deviation. Each variable has several indicators, the number for the mean (M) of an indicator is not in parentheses, the number for the standard deviation (SD) of an indicator is in parentheses.

ment, 0.878 for attention, 0.916 for AOL, 0.909 for confidence, 0.936 for relevance, and 0.838 for satisfaction). All Cronbach's alpha values were more than 0.7 (0.884 for academic engagement, 0.829 for attention, 0.890 for AOL, 0.877 for confidence, 0.909 for relevance, and 0.710 for satisfaction). Further, all loading factor values were more than or equal to 0.7. All AVE values ranged from 0.591 to 0.813 exceeding the recommended level of 0.5. Besides, all factor loading values of the construct were more than the cross-loadings values. In addition to the square root value of AVE for the attention construct of 0.769, less than 0.848, the value of the relationship between attention and academic engagement and all square root AVE constructs' values were more than the value of the relationship between the other constructs. Because there was a value of the square root AVE of one construct not more than its relationship value with other constructs, the Fornell-Larcker criterion-based approach for discriminant validity was not established. However, the measurement theory supported our research for analysis using a higher-order construct. So, the second model was evaluated.

The measurement model's study results are shown in Table 2 records the means, standard deviations, Cronbach's alpha, composite reliability, and AVE. The second model's first evaluation met two outliers' loading from effort regulation (the value for one indicator was 0.559) and elaboration (the value was 0.557) was less than 0.7. Then, we removed both indicators. The impact of indicator deletion on internal consistency reliability increased the threshold. Based on the results of data analysis for the second reflective measurement models after the first evaluation, it was found that composite reliability was more than 0.7 (0.910 for effort regulation, 0.851 for time management, and 0.911 for elaboration). Cronbach's alpha value of constructs was acceptable (0.869 for effort regulation, 0.654 for time management, and 0.870 for elaboration). Moreover, all loading factor values were more than or equal to 0.7. All AVE values ranging from 0.591 to 0.813 exceeded the recommended level of 0.5. Besides, all factor loading values of the construct were more than the cross-loadings values.

AVE's square root value for the attention construct of 0.768, less than 0.832, is the value of the relationship between attention and effort regulation. AVE's square root value for the attention construct of 0.768, less than 0.824, is the value of the relationship between attention and elaboration. AVE's square root value for the effort regulation construct of 0.847, less than 0.886, is the value of the relationship between effort regulation and elaboration. Besides, all square root AVE constructs' values are more than the value of the other constructs' relationship. Meanwhile, for the analysis results for Collinearity evaluation, all VIP values are consistent with the main criterion for evaluating structural models in Hair et al.

(2016). Each value must be more than 0.20 and less than 5, respectively. Because of the direction of research in the context of predictive power on achieving better fit models, the fit model's problem is part of the recommendations for relevant research.

Structural Model

The data analyzed in the structural model indicates the impact of motivation using attention, relevance, confidence, and satisfaction with academic engagement that focuses on effort regulation, time management, and elaboration. The data analysis results are presented in Table 2, revealing that the effects of attention, confidence, relevance, and satisfaction on AOL are significant at $p < 0.01$. Next, Table 2 indicates that the effect of AOL on each time management and elaboration is significant at least at $p < 0.01$, except for the effort regulation. At a minimum, the study's two outcomes provide an initial overview of the significance of motivational impact analysis on academic engagement factors when the AOL variable is the mediator.

Mediation Results

At the next stage, the researcher examined each motivation factor's effects on each academic engagement factor through the online learning attitude factor's first order. The results data analysis is shown in Table 3.

Based on the results of the data analysis, the effect of attention was significant on the factor of time management ($\beta_{\text{indirect}} = 0.204, p < 0.001$), the factor of elaboration ($\beta_{\text{indirect}} = 0.075, p < 0.01$) of AOL-mediated academic engagement. The results of the data analysis also show that the effect of confidence was significant on the factor of time management ($\beta_{\text{indirect}} = 0.098, p < 0.01$), the factor of elaboration ($\beta_{\text{indirect}} = 0.036, p < 0.05$) of AOL-mediated academic engagement. Next is the effect of relevance, which shows a significant effect on the factor of time management ($\beta_{\text{indirect}} = -0.113, p < 0.05$), the factor of elaboration ($\beta_{\text{indirect}} = 0.041, p < 0.05$) of AOL-mediated academic engagement, but not for the factor of effort regulation ($\beta_{\text{indirect}} = 0.015, p = 0.314$). The effect of satisfaction was also found to be significant on the factor of time management ($\beta_{\text{indirect}} = 0.134, p < 0.01$) and the factor of elaboration ($\beta_{\text{indirect}} = 0.049, p < 0.05$) of mediated AOL academic engagement, but not for the factor of effort regulation ($\beta_{\text{indirect}} = 0.017, p = 0.307$).

The research findings show that all motivational factors significantly affect time management and elaboration factors of the academic engagement construct mediated by AOL. Indeed, AOL is a core mediator in the relationship between motivation and academic engagement.

Table 3*Decomposition of the Effects of the Independent Variables in the Analyzed Mediation Model*

Independent Variable	Dependent Variable											
	Attitude to Online Learning			Effort Regulation			Time Management			Elaboration		
	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total
Attention	.441***	-	.441***	.443***	.026 (-.020, .073)	.470***	.023	.204*** (.111, .297)	.227*	.317***	.075** (.022, .127)	.392***
Confidence	-.213***	-	-.213***	.007	-.013 (-.036, .011)	-.060	.047	-.098** (-.158, -.038)	-.052	-.006	-.036* (-.067, -.005)	-.042
Relevance	.244**	-	.244**	.358***	.015 (-.014, .043)	.373***	.180*	.113* (.027, .198)	.293**	.454***	.041* (.004, .078)	.495***
Satisfaction	.291***	-	.291***	.118	.017 (-.016, .051)	.135*	.193*	.134** (.052, .217)	.327*	.092	.049* (.010, .088)	.142**
AOL	-	-	-	.060	-	.060	.462***	-	.462***	.169**	-	.169**
R ²	.560			.773			.600			.821		

Note. The effect of background variables is controlled for prior to calculating estimates. Values in the table are standardised regression coefficients. Indirect and total effects were calculated via bootstrapping procedure (with bias-corrected standard errors) using 5000 random draws. n=208; *p<.05; **p<.01; ***p<.001.

Moderated Mediation Results

The dominant student residence location determines the moderating effect on the relationship between motivation and AOL-mediated academic engagement as their place of study during online learning. The researchers performed a data review of the major differences between rural and urban sub-samples regarding the relationship between motivational factors and academic engagement. In the final stage, the researchers employed an analysis of how the mediation influence of AOL varied between students' home learning located in urban and rural areas. The student origin location was more dominant in identifying where they would take online learning with their lecturers and was a categorical or nominal variable. In contrast, a multi-group moderation study was carried out.

Initial analysis of measurement models on student subsample data from rural areas was to identify indicators whose outer loading value was less than 0.7 and remove it. After all outer loading values were more than 0.7, the measurement model analysis result showed that composite reliability was more than 0.7 (0.923 for AOL, 0.853 for attention, 0.925 for relevance, 0.910 for confidence, 0.833 for satisfaction, 0.901 for effort regulation, 0.820 for time management, and 0.887 for elaboration), and all Cronbach's alpha value construct were acceptable (0.873 for AOL, 0.748 for attention, 0.892 for relevance, 0.879 for confidence, 0.599 for satisfaction, 0.853 for effort regulation, 0.570 for time management, and 0.831 for elaboration). All AVE values ranging from 0.662 to 0.799

exceeded the recommended level of 0.5. All factor loading values of the construct are more than the cross-loadings values. In addition to the AVE's square root value for the elaboration factor of 0.814, less than 0.826, the value of the relationship between elaboration and effort regulation and all square root AVE constructs' values were more than the value of the relationship between the other constructs. Meanwhile, the analysis results for Collinearity evaluation; all VIP values are more than 0.20 and less than 5.

The data analysis of the urban area student subsample showed that composite reliability was more than 0.7 (0.927 for AOL, 0.892 for attention, 0.947 for relevance, 0.908 for confidence, 0.862 for satisfaction, 0.921 for effort regulation, 0.882 for time management, and 0.938 for elaboration), and all Cronbach's alpha value construct were acceptable (0.903 for AOL, 0.840 for attention, 0.925 for relevance, 0.874 for confidence, 0.760 for satisfaction, 0.886 for effort regulation, 0.734 for time management, and 0.901 for elaboration). All AVE values ranging from 0.664 to 0.834 exceeded the recommended level of 0.5. All factor loading values of the construct are more than the cross-loadings values. In addition to the AVE's square root value for the effort regulation factor of 0.864, less than 0.927, the value of the relationship between effort regulation and elaboration. AVE's square root value for the elaboration factor of 0.913, less than 0.927, the value of the relationship between elaboration and effort regulation. Meanwhile, the analysis results for Collinearity evaluation; all VIP values are more than 0.20 and less than 5.

Table 4

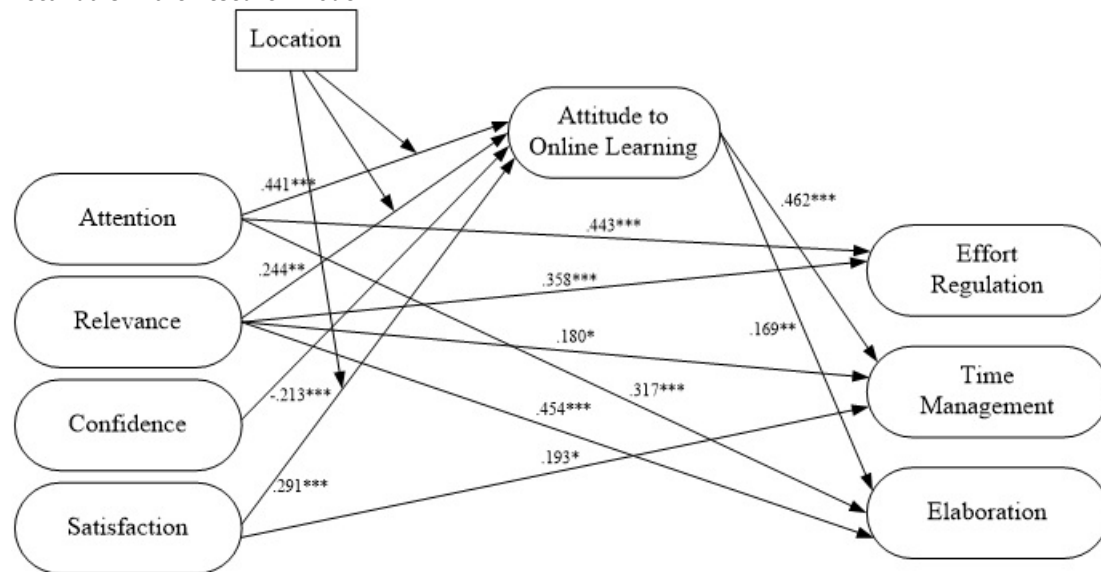
Moderated Mediation Results for Effort Regulation, Time Management, and Elaboration across Students from Rural and Urban Area

Independent Variable	Multi-group moderator	Dependent Variable											
		Attitude to Online Learning			Effort Regulation			Time Management			Elaboration		
		Direct	Indirect	Total	Direct	Indirect (95% CI)	Total	Direct	Indirect (95% CI)	Total	Direct	Indirect (95% CI)	Total
Attention	Rural	.372**	-	.372**	.358***	.030 (-.018, .098)	.388***	.119	.121 (.017, .264)	.240	.210*	.071* (.013, .151)	.282*
	Urban	.306*	-	.306*	.336**	.019 (-.037, .072)	.356***	.145	.146* (-.001, .281)	.291	.184	.071 (-.004, .167)	.254*
Confidence	Rural	-.381***	-	-.381***	.094	-.031 (-.076, .025)	.063	-.018	-.124* (-.223, -.037)	-.106	.123	-.073* (-.142, -.021)	.049
	Urban	-.193*	-	-.193*	-.078	-.012 (-.057, .019)	-.090	.123	-.092 (-.207, -.011)	.031	-.031	-.045 (-.122, .001)	-.076
Relevance	Rural	.287**	-	.287**	.356***	.023 (-.018, .071)	.379***	.274*	.093 (.014, .216)	.367**	.506***	.055 (.010, .119)	.561***
	Urban	.283*	-	.283*	.517***	.018 (-.025, .089)	.535***	-.014	.134 (-.011, .339)	.121	.420***	.065 (-.001, .187)	.486***
Satisfaction	Rural	.282*	-	.282*	.131	.023 (-.020, .075)	.154	.174	.092 (.005, .212)	.266*	.039	.054 (.004, .121)	.093
	Urban	.405***	-	.405***	.144	.026 (-.038, .114)	.170*	.215	.193* (.066, .381)	.408***	.189*	.094 (.012, .225)	.282***
AOL	Rural	-	-	-	.080	-	.080	.326**	-	.326**	.192**	-	.192**
	Urban	-	-	-	.063	-	.063	.476***	-	.476***	.231*	-	.231*
R ²	Rural	.438			.696			.532			.743		
	Urban	.591			.815			.672			.778		

Note. Conditional indirect effects were calculated via bootstrapping procedure (with bias-corrected standard errors) using 5000 random draws. $n_{\text{Rural area}}=116$; $n_{\text{Urban area}}=92$; * $p<.05$; ** $p<.01$; *** $p<.001$.

Table 4 shows a significant difference between sub-sample based on students' home learning location in urban and rural area categories in the relationship of the factors, (a) relevance to time management; and (b) attention, satisfaction to elaboration. Therefore, there was a different finding between the sub-sample in rural and urban areas. Results related to the relationship between motivational factors on relevance, confidence, and satisfaction with academic engagement were satisfied. Each path had a different significant effect on the two sub-samples based on multi-group moderation.

Overall, the results were focused on factors; first is the effect of motivational factors in the form of attention and relevance to effort regulation; also, relevance to elaboration. Meanwhile, the rest components of motivational factor are not significant. The second is the significant effect of the whole motivational factors on AOL. The third is the differences between rural and urban sub-samples regarding the relationship between motivational factors and academic engagement. Student learning locations could moderate the mediation of attention, relevance, and satisfaction.

Figure 2*Significant Direct Paths in the Research Model*

Moreover, the researchers analyzed the conditions of the AOL-mediated indirect influence of the motivation factor on all students' academic engagement factor between urban and rural sub-samples to confirm the effect of moderate mediation. Table 4 displays these indirect effects. As shown in Table 4, the factor of attention to time management ($\beta_{\text{indirect}}=0.146$, $p<0.05$) and the factor of satisfaction to time management ($\beta_{\text{indirect}}=0.193$, $p<0.05$) were significant for students whose home learning is located in the urban area. Meanwhile, the significance for students who learn at home in rural areas was attributed by the confidence factor to time management ($\beta_{\text{indirect}}=-0.124$, $p<0.05$), the factor of confidence to elaboration ($\beta_{\text{indirect}}=-0.073$, $p<0.05$), and the factor of attention to elaboration ($\beta_{\text{indirect}}=0.071$, $p<0.05$). The other study results revealed that there was no mediating effect that was moderated by relevance and satisfaction to effort regulation and elaboration. The result provides partial support for academic engagement affected by student motivation, with motivation moderated by location factors and then mediated by students' attitudes toward online learning. Figure 2 provides a visual model of all significant direct paths as derived from this research.

DISCUSSION

Academic Engagement

This study's findings showed that the research participants tend to be affectionate enough to actively engage academically in online learning during emergencies. They are devoted to managing study time. It is consistent with the research outcome of Ferrer et al. (2020). Wolters and Brady (2020) believe that time management is a significant self-regulation mechanism in which students actively manage when and how long they engage in necessary activities to achieve their

academic goals. Effective time management is reflected in the student's basic strategic habits, which include creating a plan, adhering to a learning schedule, making to-do lists through setting personal deadlines and reducing unnecessary time or distractions. Besides, Strunk et al. (2013) concluded that successful time management is embodied in a person's ability to use their time efficiently and in a way that both advances their achievement of valued goals and avoids distractions, procrastination, or other misappropriation of time. Also, higher education students are seeing a rise in their potential to be autonomous learners. They are supposed to be independent learners and usually experience increased autonomy and accountability so they can participate in more learning experiences outside the classroom, on their own time, and under their guidance (Banahan & Mullendore, 2020).

Nevertheless, emergency online learning situations are distinct from face-to-face learning, not due to differences in cognitive processes or the strategies essential for learning but rather due to contextual differences in constraints, affordances, and objectives. The broader issue of allocating time for learning is present (Del Valle & Duffy, 2009). Even with the fixed class time and the campus as a reminder, numerous students require assistance in managing their time for academic work. The necessity of managing the flexibility of online learning is exacerbated by the absence of a fixed class time or other signals to indicate that it is "time to learn." This is why establishing a connection between the learning objective and students' life goals is crucial for developing self-directed learning.

Research findings also revealed that the research participants appear to be sufficiently affectionate to engage effectively in online learning in an emergency by demonstrating their commitment to a deeper understanding of learning

material independently. Motivated students are responsible for learning by connecting new ideas to prior knowledge in this setting. Also, they attempt to understand the learning material by linking new concepts to prior knowledge, constructing the meaning of the information to be learned, and critically evaluating knowledge. Emergency online learning situations were unintentional, convincing student-centered learning environments by promoting meaningful learning. However, Pires et al. (2020) argued that student-centered learning environments enable students to use elaboration strategies by attempting to summarize the content in their terms, connecting new concepts to prior knowledge, and incorporating information from various sources. The effect of elaboration on attitude strength depends largely on people's perceptions of their elaboration and their beliefs that more elaboration produces better judgments that can be held with greater certainty (Barden & Tormala, 2014). This research finding asserts that student-centered learning environments are anticipated to encourage students to develop a more profound and tangible comprehension of new concepts by integrating them into their existing knowledge and utilizing them in problem-solving projects and case discussions. These students' acts in online learning activities are needed. Their commitment to participate academically supports their comprehension of learning materials, and the aim of learning will be reached by the end of the day. Motivated students can manage the situation even if it is difficult in this emergency.

Student Motivation

Research results showed that the respondents' decent attitude to be actively academically engaged in the online learning process emerges because they are driven by attention, relevance, confidence, and satisfaction (ARCS) during the emergency situation. Li and Keller (2018) found that the ARCS model encourages academic achievement and motivation and enables students to show good attitudes in the learning process. Motivation is also a pivotal factor in the student's devotion to related activities, the continuation of related activities, desire and learning through feeling linked to related activities (Goksu & Bolat, 2020). Nevertheless, the research findings contend that the online learning environment attracts and piques students' interest. The learning materials are also relevant to their interests, improving their academic engagement and sense of connection in the online learning environment. Besides, students' motivation is at an appropriate level of confidence. They can resolve well-established fears that obstruct their learning of lessons or achievements and do not neglect crucial details in their online learning activities. The satisfaction factor emerges since students are pleased with the online learning experience and the effects of a consistent willingness to learn by knowing natural outcomes, unforeseen rewards or good effects.

However, attitudes to online learning (AOL) driven by these ARCS motivational factors were not significant in shaping student effort regulation. Students' process of controlling their actions adequately to achieve their learning target during an emergency was not affected by their AOL based on motivation factors in attention, relevance, confidence, and satisfaction. These results seem to be impressive. Students notice that they should accomplish their personal aim following the learning objective, even in the case of an emergency. Online or offline learning appears not to affect students' devotion to learning. However, Kemp (2020) found that the motives for face-to-face and online learning were very close to the effort students felt they had made in their classrooms. In both cases, students demonstrated that their efforts depended largely on their expectations and the degree to which they regarded classes as stimulating, rather than what anyone else thought of their contribution. This phenomenon is promising because it suggests that most students partake in these classes because of their inherent self-motivation, rather than merely meeting others' expectations. Moreover, Valantinaitė and Sederevičiūtė-Pačiauskienė (2020) found that AOL students were affected by the favorable factors of using the online learning environment defined in five categories: content resources/base; instructor personality; student personality, knowledge presentation, and institutional accessibility. Besides, Ozdemir (2018) stated that the school's contribution positively affects the students' academic, emotional, and behavioral development. It seems odd as the participants found out that using the online learning environment was their most essential, led by uploading material to the online learning environment and its convenience to use. Still, this research indicates that students' attitudes continue to suggest that motivation expedites the resolution of external distractions. Motivation has a role to play in student actions as self-regulating learners. It also refers to the perceived importance of an activity that influences behavioral intentions and refers to the learner's inner motivation to learn, including the pleasure inherent in the activity and the desire to achieve the goal (Aguilera-Hermida, 2020). Highly self-regulated learners demonstrate successful, positive motivation and self-efficacy in their learning processes by selecting learning content, defining learning goals, and organizing and controlling their learning processes (Aguilera-Hermida, 2020; Kemp et al., 2019).

Attitude to Online Learning

The researcher also found that students whose online learning locations are located in rural areas have dominant motivational factors, including attention and confidence, which lead them to devote themselves to elaborating and managing time to understand deeper learning content. Studies noticed that infrastructure facilities in Indonesia are backing up this finding. Indonesia's big educational challenge

is the vast geography and many remote areas (Luschei & Zubaidah, 2012). The majority of Indonesia's rural areas experience low bandwidth Internet connectivity, lack of locally developed electronic content, restricted access to computers or most are computer-illiterate, and frequent power blackouts are also a major obstacle. Only 48.3 per cent of Indonesia's rural areas have been connected to the Internet, while the other still experiencing difficulties accessing the Internet (Budiyanto et al., 2019). These conditions shifted students' attention to elaboration, reflecting their commitment to show their good attitudes by asking questions, engaging, and generating cognitive issues. Rural students demonstrated a fusion of behavioural and cognitive processes that clarified their passion for incorporating more information into existing knowledge to create a deeper understanding. Rural students also tend to attempt to summarize the material in their words, relate new concepts to prior knowledge, and integrate information from various sources that can be accomplished through self-study, discussion, taking notes, or answering questions.

Furthermore, rural students have shown confidence, which leads them to devote themselves to creating and managing time to understand deeper learning material. Rural students reckon that they can achieve learning goals by inspiring them to believe and feel that they can succeed and track their progress, even though their home learning location is rural. Rural students can cope with the minimum infrastructure by struggling to improve their understanding of achieving the learning target during the emergency online learning situation through peer-discussion and self-learning. Rural students were also confident in controlling their learning time. Since they did not have to go to campus, rural students can save and use their time more flexibly and change their schedule depending on the learning goal that needs to be accomplished. It also includes setting and prioritizing priorities, short-and long-term planning, measuring time needs, monitoring how time is spent, and intentionally structuring or allocating time. Nevertheless, in addition to motivation, self-regulation, situational factors, and interaction also play a role in online learning, particularly in emergency online learning (Lei & Lin, 2022). It also encompasses situational and emotional challenges, necessitating meticulous instructional design and institutional support. In the meantime, students whose online learning locations are located in urban areas have a dominant motivating factor in the attention and satisfaction components, resulting in a good attitude towards active academic engagement in the online learning process through the management of learning time. Urban students appeared to be able to embrace emergency online learning situations and effective resources for online learning. Moreover, urban students showed their curiosities and interests because they obtained the proper stimulus from the online process environment that concerns handling and focusing their attention. Churiyah et al. (2020) found that student domicile often affects the opportunity to access technology. Students living in urban

areas will be more responsive to technology. Still, it will definitely be challenging to carry out online media-based learning, unlike students living in rural areas. It explained the importance of the Internet in the online learning environment as it enables students to interact more easily and take advantage of more versatile learning processes. They tended to figure out how to make the experience of the emergency online learning situation more engaging and interesting. They also demonstrated a continuous willingness to learn and satisfaction with the learning experience's process or outcomes.

This research proposes that the factors of attention, relevance, confidence, and satisfaction that are associated with the online learning location contribute to students' academic engagement during an emergency online learning situation, in contrast to some previous studies (Al-Hashmi, 2021; Bhowmik & Dipak Bhattacharya, 2021) that suggested that students' motivation in remote online learning is influenced by a variety of academic factors, including the absence of group work and teachers, as well as non-academic factors, such as internet connectivity and family obligations. The findings of this study also corroborated the Nistor (2013) study that the location effect significantly affected students' positive attitudes towards online learning. Nevertheless, this was inconsistent with the findings of Chung and Mathew (2020), who asserted that students' intention to continue with online learning is significantly influenced by their contentment with the online learning experience. The online learning is reasonably manageable for students in urban areas as urban students' access to connectivity is much greater than in rural areas (Beiwinkler, 2020). Urban students' satisfaction resulted from the online learning process supported by their online learning areas. Urban students felt a supportive learning atmosphere through peer-to-teacher contact with students. Urban students also felt that their views had been heard and respected, and mastering challenges that strengthened their sense of competence.

Limitations and Recommendations

Collecting data in a cross-sectional study is perceived to be one of the drawbacks of the study so that other methods, such as time series, cohort and longitudinal, are required. On the other hand, with this data collection technique, there are statistical signs that construct measures are relatively considered to have the same meaning by respondents, such as confidence and relevance variables.

On the instrument scale, researchers cannot make longer sentences to clarify to students the meaning of each component, such that variations in meaning are more apparent. It is also impossible for the researcher to add a direct and more in-depth description of each component before the students make an evaluation. Such a constraint is one of the limited data collection factors that need to be performed online due to government regulations due to large-scale social

restrictions on Indonesia's emergency conditions. This research persists in providing gains because new knowledge exists about how the motivating factors of students who online study located in rural or urban areas to their attitudes in the online learning process during the emergency situation and their academic engagement. The relevance of the statistical analysis findings in this study has to do with student knowledge aspects depending on how the information acquired is perceived.

In the research discussion, the reflection findings are also related to the knowledge students have, so there are implications for student motivation and effort regulation. However, the knowledge factor has not been included in the analysis so that the study is not carried out. This aspect needs to be considered for further concern on the conceptual framework in this study.

Motivation factors and academic engagement in this research are an assessment that focuses only on students and has not been seen from the point of view of social-environmental factors that affect them. Researchers also argue that the social environment is a part that influences each individual's growth, even in the online learning process (Romero et al., 2020; Wang et al., 2020), so that this aspect becomes an opportunity for further research development. The study also did not examine the characteristics of students who study online in urban or rural areas because researchers did not find evidence that could indicate disparities in student character between those learning online from urban areas or rural areas. The student-characteristic theme based on online learning location will be a recommendation, particularly in our next research.

CONCLUSION

In order to deal with emergency situations, the teacher must be prepared to create a teaching scenario that can motivate students within the context of higher education. Students' academic engagement should be considered during an emergency resulting from a shift to online learning. Comprehending the students' backgrounds, needs, and characteristics is essential for the teacher to integrate them into the learning process. Motivated students would benefit from being actively involved in online learning to be devoted to managing their study time and developing a more profound comprehension of the material. The students' positive attitude towards being actively engaged in the online learning process results from their attention, sense of relevance to the online learning process, confidence, and satisfaction with the online learning process. While these motivational variables did not substantially impact the regulation of student effort, they did engender attitudes.

Students' success is substantially determined by their education access, even in emergency situations. Compared

to students in rural and urban areas with limited access to information and communication technology, urban students have a substantially different educational experience. Nevertheless, the motivational factor of urban and rural students' access to a computer and the internet has been demonstrated. Attention and confidence were the primary motivational factors for students enrolled in online learning programs in rural areas. Consequently, they dedicated themselves to organizing and developing their learning time to understand the course material better. In the meantime, students enrolled in online learning programs in urban areas possess a prominent motivating factor in the attention and satisfaction components, which leads to a favourable attitude toward active academic engagement in the online learning process through effective learning time management. The locations of online learning access revealed the motivational factors of various students. Teachers should offer various learning opportunities through emergency online learning activities that address the students' learning demands and preferences, easing the learning burden. The study underscores the necessity of future educational reforms and policy initiatives to recognize students' diverse conditions and realities completely and continuously adapt the emergency online learning activities and learning delivery mode to the local context. Moreover, this investigation illuminated the infrastructure conditions that support the online learning process during the emergency situation in both urban and rural areas.

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DECLARATION OF COMPETING INTEREST

None declared.

AUTHOR CONTRIBUTIONS

Audi Yundayani: Conceptualization; Investigation; Project administration; Resources; Supervision; Writing – original draft; Writing – review & editing.

Yatha Yuni: Investigation; Methodology; Validation; Writing – original draft (supporting); Writing – review & editing.

Fiki Alghadari: Data curation; Formal analysis; Investigation; Visualization; Writing – original draft (supporting); Writing – review & editing.

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The Role of Artificial Intelligence in Transforming Language Learning: Opportunities and Ethical Considerations

Adenike A. Akinsemolu , Helen Onyeaka 

University of Birmingham, United Kingdom

ABSTRACT

Artificial Intelligence (AI) has transformed teaching and learning across various disciplines, among them languages. AI has numerous applications in language teaching and learning, including algorithms that personalize learning for individual learners, identify and structure lessons and learning activities based on a learner's strengths, evaluate and provide constant feedback on a learner's progress, and simulate interactive learning environments. Such innovative tools and applications enhance both language comprehension and production skills among learners, optimizing the outcomes of language teaching and learning. However, the adaptation of AI for language learning presents some ethical challenges related to data privacy, bias in the development and training of algorithms, and the lack of universality in access and usage of AI, which threatens to widen the already extensive inequalities in education. This article explores these dimensions of the application of AI in language learning and teaching with the overarching goal of fostering a more informed and ethical approach to the integration of AI and related technologies in language education.

KEYWORDS

Artificial Intelligence, language, algorithms, education, integration

INTRODUCTION

Since its development in the 1950s, the concept of intelligent computers and computer systems that can simulate human activities such as learning, decision-making, and problem solving has advanced through innovations that have enabled its integration in different fields. One of the fields in which AI has and continues to be applied is learning. The integration of AI in learning takes various forms from both learning and teaching perspectives. From a learning perspective, AI offers unlimited learning materials that learners can use, ranging from personalized lessons to chatbots that answer questions when prompted (Seo et al., 2021). From a teaching perspective, AI offers opportunities for the automation of learning, student assessment to determine their level of knowledge in a course, and the provision of automated feedback to learners (Seo et al., 2021; Zhang and Aslan, 2021; González-Cala-

tayud, Prendes-Espinosa and Roig-Vila, 2021). These applications of AI in education are universal across all disciplines but have been adapted differently to suit individual disciplines.

In language learning, technological innovations such as mobile applications, interactive chatbots, and speech recognition programs are revolutionizing learning and teaching (Kushmar et al. 2022 and Ali, 2020). These innovations are favored for benefits such as self-regulation in learning, improved vocabulary among learners who use AI to learn or improve their skills in new languages, and increased motivation to learn new languages quickly compared to learners who use conventional approaches to language learning (Wei-Xun and Jia-Ying, 2024; Song and Xiong, 2023; Wei, 2023). However, the use of AI in language learning and teaching presents a few challenges as well. Notably, while AI provides a wide pool of information and

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Correspondence:
Helen Onyeaka,
h.onyeaka@bham.ac.uk

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lessons through which learners can acquire language skills, no program can fully replace human instructors. Further, AI-led language learning programs are only as accurate as the data used in their formulation and the programs used in their development, which are yet to be refined to account for limitations such as heavy accents, inaccurate translations, and the role of non-verbal communication cues such as gestures in language expression and learning (Liu, 2023; Sharadgah and Sa’di, 2022).

As further advancements in AI continue to drive its applications in language learning and teaching, we explore how AI is reshaping language learning and teaching to develop a more ethical and informed approach to its further integration with how language skills are taught and learned. To achieve this objective, this article explores some of the innovations in AI that have been adapted for language education to enhance fundamental language skills such as reading, comprehension, sentence construction, and speaking. We discuss existing ethical issues and challenges observed in these applications, identify gaps in research and literature on these challenges, and propose solutions to promote a more informed and ethical approach to integrating AI in language education.

Artificial Intelligence in Language Learning and Education

The integration of AI in education has attracted extensive research, which is well documented in literature over the past decade as shown in Table 1 below. A common consensus in the literature on AI in education is the supplementary role of innovations in AI in advancing education, alluding to their role as supporting methods of instruction and learning and not the primary means of instruction and learning (Chichekian and Benteux, 2022; Karan and Angadi, 2024). While it is a universally held notion that is widely accepted in academia and research and is reflected in the types of AI tools developed for learning, the recognition of AI as a supplementary method of learning and teaching has not stopped a group of

researchers, instructors, and other education stakeholders from calling attention to its nature as a disruptive innovation in education. Schiff (2021) identified various ways in which AI disrupts the status quo in education, including threatening the role of the teacher as held in conventional learning, upsetting or invalidating important concepts in education such as classroom size, and potential negative impacts on learner motivation. Despite the widespread recognition of its disruptive nature, a second universal notion in the integration of AI in learning is its inevitability, which has sparked interest and research in its application in specific fields of education. One of these fields is language learning.

Research and literature on the applications of AI in language teaching and learning are extensive. One of the areas of the integration of AI in language learning that has been studied widely is the revolutionary role of language learning applications and its impact on the acquisition of language skills both as a replacement for conventional language learning and as the sole method of learning (Wei-Xun and Jia-Ying, 2024; Song and Xiong, 2023). Notably, most research studies recognize that the language learning applications have innumerable benefits, including establishing autonomy in the acquisition of language skills, enabling learners to pick up new vocabulary and learn the correct pronunciations at their convenience, and increased motivation to learn new languages (Karasimos, 2022; Yuen and Schlote, 2024). However, the challenges that are associated with the innovation are also discussed in depth. Studies highlight drawbacks such as the need for large datasets to train the applications, the lack of human interaction, the applications’ failure to account for the relationship between language and context, limitations on creativity since output and lessons are based solely on the provided data, and unexplained language rules (de la Vall and Araya, 2022; Ali et al., 2024; Yuen and Schlote, 2024). Another AI tool whose integration in education is revolutionizing language learning is adaptive learning platforms, which has attracted the attention of stakeholders in academia as reflected in research on its adaptation for learning benefits, and challenges. Notable out-

Table 1
Studies on the Applications of Artificial Intelligence in Language Education

Study Focus	Reference
The potential for the integration of AI in education	Chichekian and Benteux, 2022
The risks of the integration of AI into school education	Karan and Angadi, 2024
The future of AI in education	Schiff, 2021
The impact of the integration of AI in language education on learning outcomes	Wei-Xun and Jia-Ying, 2024
The impact of language learning applications on learners’ vocabulary	Song and Xiong, 2023
The experiences of learners who use AI to supplement conventional language learning	Yuen and Schlote, 2024
The benefits of AI language learning tools	de la Vall and Araya, 2023

comes of these efforts include breakthroughs in the design of adaptive e-learning environments that optimize learner engagement, the recognition of the positive impact of the innovation on learner engagement and motivation, and a negative implication on data privacy (El-Sabagh, 2021; Kaur, Kumar and Kaushar, 2023; Gligorea et al., 2023). While the bulk of this research and literature on the innovative ways in which AI has been integrated specifically in education focuses on general aspects such as overall learning outcomes, there is a pool of studies focusing on language education, with emphasis on innovations such as language learning applications, adaptive learning systems, interactive e-learning tutoring systems, and chatbot technology (Liu, 2023; Kaur, Kumar and Kaushar, 2023; Gligorea et al., 2023; Contrino et al., 2024).

One of the primary challenges that researchers and other stakeholders with an interest in research on the adaptation of AI for language teaching and learning identify in their research lies in ethics. A review of the available literature on the topic identifies three main ethical considerations namely data privacy, bias, and the implications of most AI innovations on teacher-learner interactions (Gligorea et al., 2023; Kaur, Kumar and Kaushar, 2023; Akgun and Greenhow, 2022; Idowu, 2024). While the ethical challenges are not discussed exclusively based on their relevance to language learning, their implication on learning outcomes, access to language education, and the safety of learners' data is clear without the direct link to the field of study. In addition to the three biases, there is a common concern over the implication of the integration of AI with language learning and teaching on inequalities in access to education. Existing inequalities, particularly in access to technology due to the digital divide, are linked to equally pervasive inequalities in the adoption of AI in teaching and learning, with researchers concerned that the integration will exacerbate socio-economic differences in access to education (Bentley et al., 2024; Veras, Dyer and Kairy, 2024). However, the ethical consideration is only discussed in the context of the general integration of AI in education.

DISCUSSION

The integration of AI with language education has the potential to drive a transformation of how languages are taught and learned. This transformation is already underway, a transition that has been captured extensively in literature and continues to attract further research. While the role of innovation has received appropriate recognition for its contribution to the ongoing integration of AI with language education, some factors that have made equally significant contributions to the transformation have received less attention. For instance, some studies report a positive reception to innovations such as language learning applications (Victorivna et al., 2022). While the link is not established by the studies, the positive attitude with which AI-based learn-

ing models are perceived and have been received is responsible for the fast and positive uptake of AI-based language learning. This could justify the rapid growth of the language learning applications market as well as the rising adoption and acceptance of other applications such as adaptive learning systems.

Currently, the two innovations, and other AI tools that have been integrated with language learning, have been applied to several elements of language learning, including the development of individualized learning paths for students to learn at their pace and assessment features that offer tests to learners. While there are no standardized guidelines for their integration with formal and informal language learning, their adoption, progress, benefits, and drawbacks as captured in recent research and literature provides a roadmap for the development of a standardized, more ethical, and informed approach to the further integration of AI in language learning. For instance, some inherent biases in machine learning algorithms are transferred to the algorithms used to train the models on which language learning applications are based. One such bias is the data bias, which stems from the social, cultural, and economic status, racial identity, and geographical location of the sources of data used to train AI language learning models on content and assessment (Idowu, 2024). The bias could limit the educational content to the nuances of the language usage of the individuals or resources used to develop it resulting in unfair assessment standards and limitations in the learning resources. An improved and ethical approach to integrating AI in language education could address the problem by training the algorithms on which innovations such as adaptive learning systems are based on comprehensive and standardized data drawn from approved curricula. Further, the detrimental implications of algorithmic bias leads back to the conversation on the role of AI as supplementary or complementary as opposed to the primary method of instruction in language learning.

Second, as discussed in literature and captured in research, the digital divide carries over gaps in access to education to AI-based language learning models and platforms (Bentley et al., 2024; Veras, Dyer and Kairy, 2024). As a result, access to language education is not universal despite the adoption of innovations such as apps that allow learners to access courses, assessments, and virtual tutors using widely used gadgets such as smartphones. Another perspective on the digital divide, which is missing in studies and literature on the topic, is its implication on less-spoken languages, designation of some languages as the primary languages of instruction, and implication on different variants of popular languages. For instance, there are several variants of spoken English with speakers strewn all over the world. However, only a few are reflected in AI-driven learning and tutoring systems. Similarly, the current language learning applications, AI tutoring systems, and other AI tools are only available for some languages, leaving out many languages

spoken in different parts of the world, particularly the parts of the world that are on the adverse side of the digital divide. Unfortunately, not much can be done to address these concerns and establish universality in the integration of AI with language learning without addressing the overarching problem of the digital divide.

A final element of AI integration in language education that is not adequately discussed in literature is the lack of standardization in language content, lesson structure, methods of teaching and learning, nature of assessments, and other standards of language education that are adhered to in conventional language education. Granted, the lack of a universal consensus on standard guidelines for AI in education is acknowledged (Nguyen et al., 2022). However, specific links to language education are missing, leading to gaps such as the structure of lessons in AI language tutoring systems, the order of introducing vocabulary and concepts on language structure in language learning applications, and the methods of instruction to be adapted for AI-driven integrated learning systems. To foster a more informed and ethical approach to integrating AI in language education, universal standard language pedagogy should be developed and used to develop learning paths, course content, and assessments for AI applications for language learning. This should be done through the involvement of all stakeholders, who include all stakeholders who are present in traditional or conventional learning settings, including teachers, learners, and academic researchers and stakeholders whose involvement is warranted by the integration of AI, particularly software developers (Arajlani, Crabb and Murray, 2023).

Ultimately, if the above challenges facing the applications of AI for language education are addressed as proposed, the future of AI within the field will be more inclusive. The content, lessons, and assessments will be standardized, more languages, including indigenous languages, will be available on AI-driven learning platforms, and algorithms will be unbiased, enhancing the quality of language content and accuracy of assessments. However, reshaping language learning and teaching using AI will require collaboration be-

tween learners, stakeholders in academia, the technology experts who develop the AI systems, curriculum developers, and the people in charge of policy formulation in education and developing technologies.

CONCLUSION

The adaptation of AI for applications in education has influenced various fields of education positively. One of these fields is language education, which has benefited from innovations such as learning applications, tutoring systems, interactive learning platforms that allow learners to receive feedback on their progress, meet and interact with other learners, and experience learning that simulates the traditional physical learning. While transformative and effective in the acquisition of new language skills, the integration of AI in language education raises some ethical challenges, including bias in the algorithms on which the platforms are based, inequalities in access to the platforms, and lack of standardization. With the proposed solutions, these drawbacks can be addressed to optimize learning outcomes, broaden the pool of the number of languages available for learning, and establish pedagogical standards to maintain quality language education.

DECLARATION OF COMPETING INTEREST

None declared.

AUTHOR CONTRIBUTIONS

Adenike A. Akinsemolu: conceptualization, writing (original draft), writing (reviewing and editing), validation

Helen N. Onyeaka: conceptualization, writing (original draft), writing (reviewing and editing), validation

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A Paradigm Shift for Language Education: A Book Review

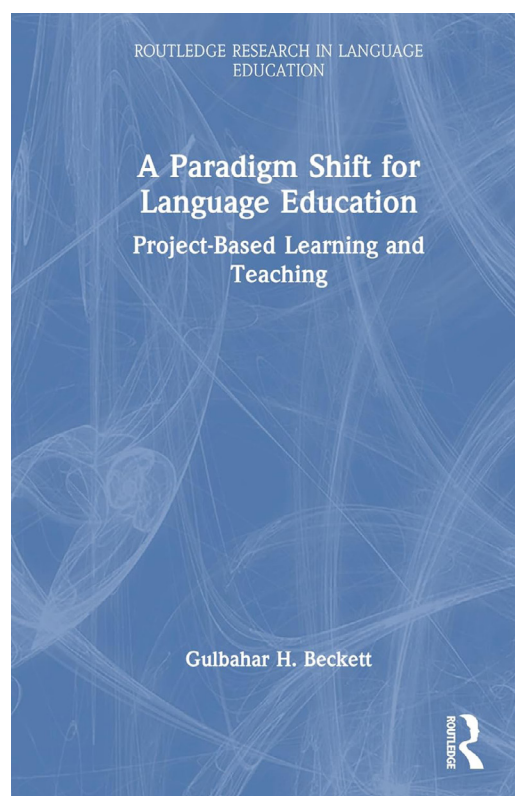
Aidillah Suja¹, Muassomah², Sutaman³

Universitas Islam Negeri Maulana Malik Ibrahim Malang, Indonesia

A PARADIGM SHIFT FOR LANGUAGE EDUCATION: PROJECT-BASED LEARNING AND TEACHING, WRITTEN BY G.H. BECKETT, NEW YORK: ROUTLEDGE, 2024, 166 PP., (PRINT BOOK), ISBN: 978-1032700168

In line with 21st-century curriculum reforms, "enhancing student learning" has long been a central focus in education, including language education. Researchers and educators have shown strong interest in student-centered approaches. Despite numerous efforts to improve the quality of language education, many classrooms remain predominantly teacher-centered (Sun & Zhu, 2023). In response to this, language scholars and educators have proposed Project-Based Learning and Teaching (PBLT) as an alternative instructional approach to teacher-led instruction (Chen & Yang, 2019; Guo et al., 2019). The book *"A Paradigm Shift for Language Education: Project-Based Learning and Teaching"* by Gulbahar H. Beckett provides an in-depth perspective on the need for a paradigm shift in language education by adopting PBLT. It highlights the significance of combining academic content instruction with developing 21st-century skills in second language (L2) learning. Beckett explains how PBLT can help students achieve deep understanding, think critically, and solve problems in real-world scenarios.

The 6-string chapters offer a unique insight into PBLT's application and theoretical foundations. The first chapter begins with the question, "Why Project-Based Learning and Teaching (PBLT)?" and discusses the background and philosophy behind PBLT, which has its roots in John Dewey's thoughts on experiential learning (Dewey, 1938), emphasizing that language learners acquire knowledge most effectively through direct, hands-on experiences, actively constructing meaning through interaction with the target language environment, rather than passively absorbing information, making learning a dynamic process of doing, reflecting, and applying. Beckett introduces PBLT as an educational approach focusing on language teaching and developing 21st-century skills through real-world projects that integrate academic content and social skills. The chapter effectively argues that PBLT equips students not only for language proficiency but for real-world challenges by promoting mastery of both content knowledge and transferable cognitive and social skills. This discussion sets



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Correspondence:
Aidillah Suja,
aidillahsuja87@gmail.com

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the stage for a broader argument that a paradigm shift is necessary to meet the evolving needs of today's learners.

Chapter 2, "Philosophical Paradigms and Theoretical Perspectives," places PBLT within the functionalist paradigm, which emphasizes language socialization in real and meaningful contexts. Beckett contrasts PBLT with other methods, such as *Task-Based Language Teaching* (TBLT) and *Content-Based Instruction* (CBI), positioning PBLT as a more comprehensive approach to language acquisition, particularly in contexts requiring the integration of content knowledge and cross-cutting skills. However, the comparison with other approaches could benefit from more in-depth analysis of when and why educators might choose PBLT over TBLT or CBI, depending on the teaching context.

Chapter 3, "Project-Based Learning and Teaching Goals and Evaluations: Philosophical, Cultural, and Linguistic Models," presents an empirical investigation into the cross-cultural challenges of Chinese teachers and students engaging in Project-Based Learning and Teaching (PBLT) within Canadian ESL classrooms. Adopting an ontological perspective that views "human beings as active agents" (p. 60), this chapter delves into empirical data to explore teachers' perceptions of PBLT goals and both teachers' and students' perspectives on PBLT evaluation. The findings reveal a disparity between teachers' positive views of PBLT and students' mixed evaluations. This discrepancy can be attributed to philosophical differences, with teachers aiming to cultivate learners' metacognitive skills while students prioritize the acquisition of foundational knowledge. Cultural factors also play a significant role, as Chinese students, accustomed to a teacher-centered approach, may find the student-centered nature of PBLT unsettling due to reduced teacher involvement. The chapter offers valuable insights for educators working in multicultural contexts and proposes promising strategies for integrating cultural considerations into PBLT implementation.

Chapter 4, "Implementing Projects into Existing Curricula and Raising Awareness with the Project Framework," focuses on how projects can be integrated into current curricula. A case study from Canada demonstrates that PBLT, when applied using "The Project Framework," can seamlessly integrate academic content, skills development, and language learning. Beckett makes a strong argument for embedding project-based work throughout the curriculum rather than assigning it as standalone projects. While the case study is compelling, the chapter would benefit from a discussion of how this framework could be adapted for different educational settings, particularly those with limited resources or institutional support.

Chapter 5, "A Project for Critical Thinking and Language Development with Social Studies Social Media," explores how PBLT can enhance critical thinking and language devel-

opment using social media in social studies classes. Beckett emphasizes the growing importance of digital literacy alongside traditional language and critical thinking skills, demonstrating how PBLT can be mediated by technology to develop critical thinking (CT) in both first and second language learners. This chapter offers valuable insights for teacher education and preparation programs but could further explore the practical challenges teachers face when implementing technology-mediated PBLT, particularly in under-resourced settings.

Chapter 6, "Critical Project-Based Learning and Teaching for 21st Century with Five Cs," integrates critical thinking with the Five Cs to create authentic, challenging, collaborative learning experiences, communicative, critical thinking-oriented, and culturally responsive. Beckett underscores the value of these competencies in fostering not only linguistic development but also learners' social (including collaboration and teamwork, communication and negotiation skills, cultural awareness and sensitivity, and respect for diverse perspectives) and cognitive developments (involving critical thinking and problem-solving skills, creativity and innovation, information and digital literacy, and self-directed learning). This final chapter summarizes the book's main arguments and reiterates the importance of preparing students for a rapidly changing and digitized world.

This book offers some strengths which are useful for language educators and stakeholders. In regards of theoretical and practical balance, the book strikes a well-calibrated balance between theory and practice, providing a clear rationale for the use of PBLT in language education while offering practical case studies to illustrate its implementation. The use of John Dewey's experiential learning as a philosophical foundation gives the book depth, and its focus on real-world projects makes it highly relevant for educators. In terms of curriculum integration, the book explains in-detailed on how PBLT can be integrated into existing curricula. By showing how PBLT can be embedded throughout the learning process rather than isolated at the end of a course, Beckett provides educators with actionable strategies to shift toward more student-centered teaching. Lastly, in terms of second language (L2) research development, the discussion of PBLT's potential to develop not only language skills but also cognitive and social competencies make this book a solid resource for both academic and practitioner audiences.

The book also offers a broad and comprehensive view of how PBLT can be applied in language learning contexts and across various disciplines. Beckett integrates multiple aspects of teaching academic content and 21st-century skills, such as critical thinking, creativity, collaboration, communication, and digital literacy. This holistic approach reflects the complexity of modern education, where students are not just expected to learn subject-specific knowledge but also acquire transferable skills that prepare them for the chal-

allenges of the contemporary world. Integrating these competencies into language education is crucial for developing learners who can navigate academic and real-world scenarios effectively. This approach is highly relevant to current research trends focusing on project-based learning to foster language competence and cross-disciplinary skills, including problem-solving and collaboration in diverse fields.

The importance of technology integration in implementing PBLT is one of the key elements emphasized in this book, particularly in developing critical thinking skills and digital literacy. Beckett demonstrates how using social media platforms, digital collaboration tools, and other technological resources can significantly enhance the student learning experience, enabling more interactive and engaging project work. Digital tools allow students to collaborate beyond the classroom, interacting in broader, more authentic, and dynamic environments. This form of engagement helps learners apply their knowledge in real-world situations, which is critical for developing academic and practical skills. Beckett's focus on technology aligns with current educational research on technology-based learning, where digital technologies are increasingly recognized for their role in improving accessibility, student engagement, and overall learning outcomes. These tools promote self-directed learning and foster a deeper understanding of content and the skills to navigate a digitally driven world.

The book also thoroughly explores how PBLT can be adapted to work effectively in multicultural and multilingual environments. Beckett highlights the challenges and opportunities when implementing PBLT in cross-cultural contexts, particularly in interpreting project guidelines and facilitating effective intercultural communication among students from diverse backgrounds. This discussion is highly relevant to current research focusing on multicultural education, where adapting teaching methods to meet the diverse needs of students has become an essential topic. Recognizing and embracing cultural diversity in language learning through PBLT reflects the growing body of research in inclusivity and multicultural education. These studies advocate for flexible and responsive teaching methods, as they are necessary to achieve optimal learning outcomes in diverse classrooms where students bring a wide range of cultural experiences and perspectives.

As every work has its strengths and drawbacks, some improvements would make this book more complete. Although

the book acknowledges the challenges of implementing PBLT—such as the need for a systematic guide for evaluating proposed projects, assessments within PBLT, high workloads, limited resources, and lack of institutional support—the solutions presented are not always detailed. A more in-depth discussion of how to overcome these challenges, particularly in resource-limited educational contexts, would enhance the book's practicality. Moreover, as a book advocating a paradigm shift, it would have been beneficial to include discussions on how PBLT can be adapted for teaching languages beyond English, such as Arabic or other languages with significant dialectal variations. This would increase the book's global relevance and applicability.

Gulbahar H. Beckett's *A Paradigm Shift for Language Education: Project-Based Learning and Teaching* offers a comprehensive and compelling argument for adopting PBLT in language education. It effectively balances theoretical insights with practical guidance, making it a valuable resource for educators, researchers, and policymakers interested in student-centered learning. While the book presents some challenges in implementation, it provides a solid foundation for those looking to transform their approach to language teaching in line with 21st-century educational goals.

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DECLARATION OF COMPETING INTEREST

None declared.

AUTHOR CONTRIBUTIONS

Aidillah Suja: Conceptualization, writing – original draft, writing – review & editing, funding acquisition.

Muassomah: Supervision, validation.

Sutaman: Supervision, writing – review & editing.

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