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ARTIFICIAL INTELLIGENCE AS ARENA OF MEANING-MAKING IN
ACADEMIC ENGLISH LANGUAGE WRITING

JEFFERSON DO CARMO ANDRADE SANTOS

São Cristóvão, SE, Brasil
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ARTIFICIAL INTELLIGENCE AS ARENA OF MEANING-MAKING IN ACADEMIC
ENGLISH LANGUAGE WRITING

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Advisor: Prof. Dr. Paulo Roberto Boa Sorte Silva, Ph.D.

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ATA DA REUNIÃO DA COMISSÃO JULGADORA DA TESE DE DOUTORADO APRESENTADA POR JEFFERSON DO CARMO ANDRADE SANTOS PARA OBTENÇÃO DO TÍTULO DE DOUTOR EM EDUCAÇÃO.

Aos vinte e três dias do mês de julho do ano dois mil e vinte e cinco, às quinze horas, na modalidade presencial, na sala do PPGED, reuniu-se a Comissão Julgadora da Tese em epígrafe, indicada pela Coordenação do Programa de Pós-Graduação em Educação da Universidade Federal de Sergipe, com parecer favorável do Colegiado. A banca foi composta pelos professores doutores Paulo Roberto Boa Sorte Silva (orientador), Simone de Lucena Ferreira, Janaina Cardoso de Mello, Ana Karina de Oliveira Nascimento, Allessandra Elisabeth dos Santos, da Universidade Federal de Sergipe, para examinar o trabalho de Jefferson do Carmo Andrade Santos, apresentado sob o título **"ARTIFICIAL INTELLIGENCE AS ARENA OF MEANING-MAKING IN ACADEMIC ENGLISH LANGUAGE WRITING"**. O orientador, assumindo os trabalhos na qualidade de Presidente, passou à palavra ao candidato para que ele expusesse sua Tese, informando que o mesmo dispunha de vinte minutos para a apresentação; cada examinador dispunha de trinta minutos e o candidato de mais trinta minutos para respostas. Terminada a exposição do doutorando, o Presidente passou a palavra aos membros da Comissão Julgadora, que iniciaram a arguição na seguinte ordem: Prof.ª Dr.ª Simone de Lucena Ferreira, Prof.ª Dr.ª Janaina Cardoso de Mello, Prof.ª Dr.ª Ana Karina de Oliveira Nascimento, Prof.ª Dr.ª Allessandra Elisabeth dos Santos. Terminada à arguição, foi dada a palavra ao candidato para que ele, se desejasse, fizesse as observações finais. Os membros da Comissão Julgadora se retiraram da sala para a atribuição das notas. Voltando logo em seguida, o Presidente anunciou que o candidato foi considerado **APROVADO**. O Presidente proclamou o candidato **"Doutor em Educação"**, devendo este resultado ser homologado pela comissão da Coordenação de Pós-Graduação. Em seguida, agradeceu aos membros da Comissão Julgadora. Nada mais havendo a tratar, o Presidente encerrou esta sessão, cujos trabalhos são objetos desta ata, lavrada por mim, André Ricardo de Souza Almeida Criscuolo, secretário do Programa, da qual assino juntamente com os membros da Comissão Julgadora. Cidade Universitária "Prof. José Aloísio de Campos", 23 de julho de 2025.
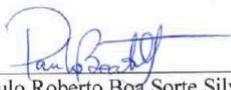
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(orientador)
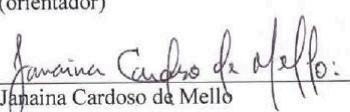
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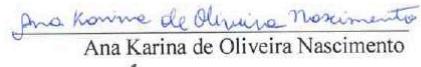
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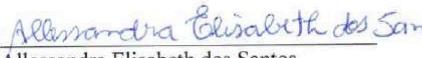
Allessandra Elisabeth dos Santos

Secretário

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ABSTRACT

Academic English language writing is a social practice with vast literature that covers from structure to style. On the other hand, contemporary academic writing has been crossed and challenged by affordances offered by artificial intelligence systems, especially from a generative standpoint. Accordingly, digital environments operated through algorithms, machine learning and deep learning have allowed writers and students to develop writing skills as well as generate expert human-like written texts in a few seconds. In light of that, this research aimed to analyze the meanings undergraduate students make about using Automated Writing Evaluation (AWE) systems and writing academically in English to understand their meaning-making processes in such processes. Based on the theory of meaning-making, this research pondered: How do the participants deal with their English learning process? What do the participants say about writing in English? What do the participants say about using AWE systems? Having such purposes, the research was characterized as a qualitative endeavor based on literature review and empirical research through a teaching intervention with junior college students majoring in English language teaching. Writing has been historically used as punishment or a selective practice instead of a compelling learning phenomenon, as well as the fact that education has not been known as effective in teaching how to ask questions in opposition to only answering granted correct answers. The thesis statement defended herein was that artificial intelligence, through the use of AWE systems, unveils and unbalances education, especially in terms of evaluation. Methodologically, the data collection was done through a teaching intervention in an English language course for undergraduate students of English at the Federal University of Sergipe. Data were collected through the document examination of the course syllabus, short-term papers, a questionnaire, and assignments performed by the participants on the platforms Write & Improve by Cambridge and Grammarly. The method of coding and data analysis was based on the Teacher-Research framework (Freeman, 1998). The theory of meaning-making was adopted as the reference for data discussion. The results showcased writing as a phenomenon directly connected with personal and cultural realms, as the participants constantly made meanings about their experiences with writing from a multifaceted cluster of life experiences. Drawing on the interactions with the AWE systems, it was possible to perceive that learning classical writing conventions is still relevant when developing as a writer, especially when grappling with human and automated feedback. All things considered, writing was mainly displayed as a subjective practice and a site of meaning-making processes.

Keywords: Academic English Language Writing; Automated Writing Evaluation Systems; Artificial Intelligence; Meaning-Making.

RESUMO

A escrita acadêmica em língua inglesa é uma prática social amplamente discutida, com vasta literatura que aborda da estrutura ao estilo. Por outro lado, a escrita acadêmica contemporânea tem sido atravessada e desafiada pelas possibilidades oferecidas pelos sistemas de inteligência artificial, especialmente sob a perspectiva generativa. Nesse sentido, ambientes digitais operados por algoritmos, aprendizado de máquina e aprendizado profundo têm permitido que escritores e estudantes desenvolvam habilidades de escrita, bem como gerem textos com qualidade semelhante à humana em poucos segundos. Diante disso, esta pesquisa teve como objetivo analisar os sentidos que estudantes de licenciatura em Letras-Inglês atribuem ao uso de sistemas de revisão automática de escrita e à escrita acadêmica em língua inglesa, a fim de compreender os processos de construção de sentidos. Com base na teoria da construção de sentidos, esta pesquisa procurou investigar: como os participantes lidam com seu processo de aprendizagem de língua inglesa? O que os participantes dizem sobre escrever em língua inglesa? O que os participantes dizem sobre o uso de sistemas de revisão automática da escrita? Com esses objetivos, a pesquisa foi caracterizada como um estudo qualitativo baseado em revisão de literatura e investigação empírica por meio de uma intervenção pedagógica com estudantes do curso de licenciatura em Letras-Inglês da Universidade Federal de Sergipe. A escrita tem sido historicamente utilizada como punição ou como prática seletiva, em vez de ser reconhecida como um fenômeno de aprendizagem processual; além disso, a educação não tem sido conhecida por ensinar a formular perguntas, mas por exigir respostas corretas esperadas. A tese defendida neste trabalho é que a inteligência artificial, por meio dos sistemas de revisão automática de escrita, desvela e desequilibra a educação, especialmente no que se refere à avaliação. Metodologicamente, a coleta de dados foi realizada por meio de uma intervenção pedagógica em uma disciplina de Língua Inglesa para estudantes da graduação em Letras-Inglês da Universidade Federal de Sergipe. Os dados foram coletados por meio da análise documental do plano de ensino da disciplina, narrativas curtas, um questionário e atividades realizadas pelos participantes nas plataformas *Write & Improve* da Cambridge e *Grammarly*. O método de codificação e análise dos dados foi baseado na abordagem da Pesquisa Docente (Freeman, 1998). A teoria da construção de sentidos foi adotada como referência para a análise dos dados. Os resultados revelaram a escrita como um fenômeno diretamente conectado a esferas pessoais e culturais, uma vez que os participantes constantemente construíram sentidos sobre suas experiências com a escrita a partir de um conjunto multifacetado de vivências. A partir das interações com os sistemas de revisão automática de escrita, foi possível perceber que o aprendizado das convenções clássicas de escrita ainda é relevante no desenvolvimento como escritor, especialmente ao lidar com feedback humano e automatizado. Em resumo, a escrita foi majoritariamente apresentada como uma prática subjetiva e um espaço de processos de construção de sentidos.

Palavras-chave: Construção de Sentidos; Escrita Acadêmica em Língua Inglesa; Inteligência Artificial; Sistemas de Revisão Automática de Escrita.

RESUMEN

La escritura académica en lengua inglesa es una práctica social ampliamente discutida, con una vasta literatura que aborda desde la estructura hasta el estilo. Por otro lado, la escritura académica contemporánea ha sido atravesada y desafiada por las posibilidades ofrecidas por los sistemas de inteligencia artificial, especialmente desde la perspectiva generativa. En este sentido, los entornos digitales operados por algoritmos, aprendizaje automático y aprendizaje profundo han permitido que escritores y estudiantes desarrollen habilidades de escritura, así como generar textos con una calidad similar a la humana en pocos segundos. Ante ello, esta investigación tuvo como objetivo analizar los sentidos que estudiantes de licenciatura en Letras–Inglés atribuyen al uso de sistemas de revisión automática de la escritura y a la escritura académica en lengua inglesa, con el fin de comprender los procesos de construcción de sentidos. Con base en la teoría de la construcción de sentidos, esta investigación buscó indagar: ¿cómo lidian los participantes con su proceso de aprendizaje de la lengua inglesa? ¿Qué dicen los participantes sobre escribir en lengua inglesa? ¿Qué dicen los participantes sobre el uso de sistemas de revisión automática de la escritura? Con estos objetivos, la investigación se caracterizó como un estudio cualitativo basado en la revisión de la literatura y en la investigación empírica mediante una intervención pedagógica con estudiantes del curso de licenciatura en Letras–Inglés de la Universidad Federal de Sergipe. La escritura ha sido históricamente utilizada como castigo o como práctica selectiva, en lugar de ser reconocida como un fenómeno de aprendizaje procesual; además, la educación no ha sido conocida por enseñar a formular preguntas, sino por exigir respuestas correctas esperadas. La tesis defendida en este trabajo es que la inteligencia artificial, por medio de los sistemas de revisión automática de la escritura, revela y desequilibra la educación, especialmente en lo que respecta a la evaluación. Metodológicamente, la recolección de datos se realizó mediante una intervención pedagógica en una asignatura de Lengua Inglesa para estudiantes de la licenciatura en Letras–Inglés de la Universidad Federal de Sergipe. Los datos fueron recolectados a través del análisis documental del plan de estudios de la asignatura, narrativas breves, un cuestionario y actividades realizadas por los participantes en las plataformas *Write & Improve* de Cambridge y *Grammarly*. El método de codificación y análisis de los datos se basó en el enfoque de la Investigación Docente (Freeman, 1998). La teoría de la construcción de sentidos fue adoptada como referencia para el análisis de los datos. Los resultados revelaron la escritura como un fenómeno directamente conectado a esferas personales y culturales, ya que los participantes construyeron constantemente sentidos sobre sus experiencias con la escritura a partir de un conjunto multifacético de vivencias. A partir de las interacciones con los sistemas de revisión automática de la escritura, fue posible percibir que el aprendizaje de las convenciones clásicas de la escritura sigue siendo relevante en el desarrollo como escritor, especialmente al tratar con retroalimentación humana y automatizada. En resumen, la escritura fue presentada mayoritariamente como una práctica subjetiva y un espacio de procesos de construcción de sentidos.

Palabras clave: Construcción de Sentidos; La Escritura Académica en Lengua Inglesa; Inteligencia Artificial; Los Sistemas de Revisión Automática de La Escritura.

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1 ENTERING THE ARENA: THE INTRODUCTION[1]

> *"We make meaning as an integral part of our experience of life, as we see things, feel things, understand things, express things, plan things, and act in ways that could have an effect. We see, hear, and feel mean in our encounters in the natural and human-historical worlds. In the human world, in other moments, meanings animate our actions. We mean to do things in our lives and in the world" (Cope; Kalantzis, 2020, p. 11).*

As expressed in the epigraph, meanings can be made through diverse forms, normally as a conglomeration that designs performances and interactions across communities of practice (Wenger, 2006). In this sense, meaning is always the result of the grouping of more than one form or mode of language, even when there is one salient form such as speech or written communication. Considering such an intertwining of forms through which language is constructed, meaning-making is flagrantly multimodal. Accordingly, these acts of language are performed inside communities and social groups, which are here referred to as arenas of meaning-making, as in Figure 1:

Figure 1 - The Entrance of the Arena
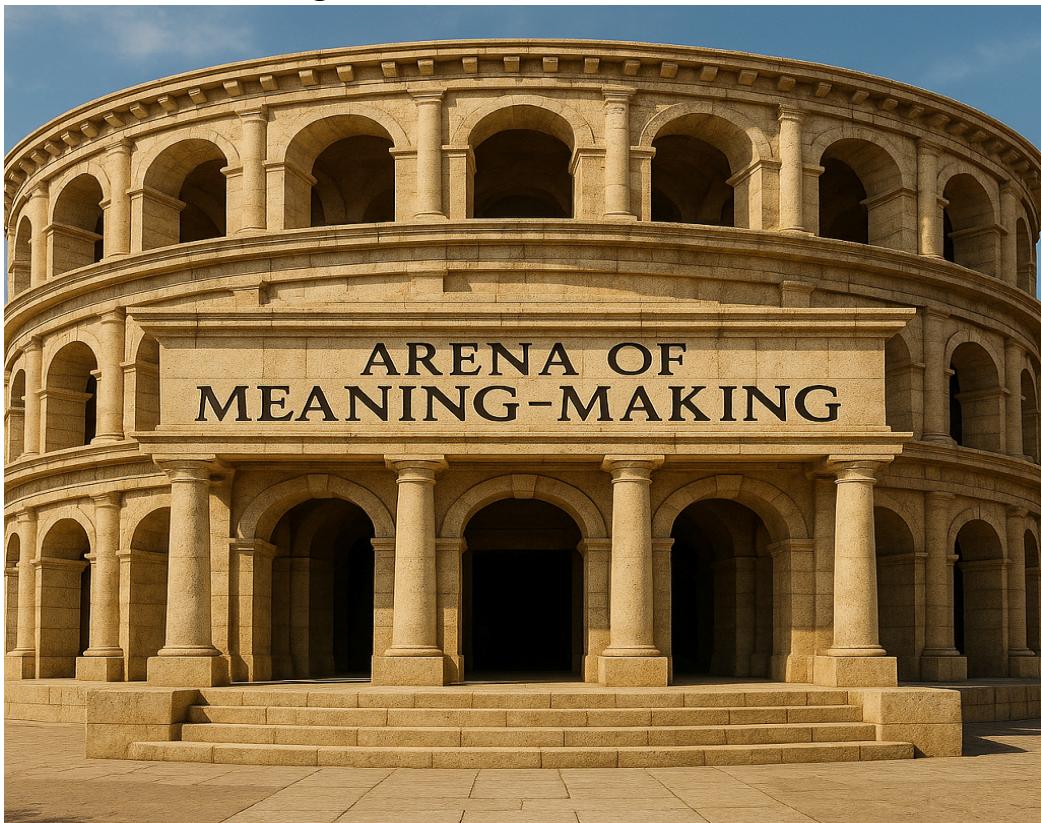
Source: Created through artificial intelligence[2]

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[1] All the sections are named around the idea of places or events carried out. The analogy was used based on Bakhtin (1981), especially regarding dialogism and how it can be seen as battlegrounds of discourse.

[2] OpenAI. Create an image of an ancient Roman-like stadium emphasizing the entrance of the arena. There is a spot over the main door with the expression "Arena of Meaning-Making". GPT-3.5 version on June 8th 2025. Artificial Intelligence. Accessed on: June 8th 2025.

Considering that we live in multiple arenas of meaning-making on a daily basis, language is not a neutral element in society, as it has been massively defended in structural approaches to language teaching for decades. Language operates as a cluster of ideological movements where meanings are constantly negotiated, challenged, and rebounded (Menezes de Souza, 1995). In this sense, arenas of conflict serve as battlegrounds where different social groups construct and perform their interpretation of reality. These arenas are driven by power relations, and the meanings that emerge are the result of dominance, resistance, and conflict (Bakhtin, 1981). As stated in the epigraph, meaning-making is inherently dialogic and dynamic, as it does not emerge in isolation but through interaction, tension, and confrontation across diverse voices situated in historical and cultural contexts (Leontiev, 2006b; 2006c).

Taking into account the concept of dialogism (Bakhtin, 1981), meaning-making is a process where the relation of meanings and voices is decisive, as meanings are flagrantly changing, adapting, and rewinding. This happens, as defended by Bakhtin (1981), because every meaning is a response to prior meanings and anticipates future meanings, which streamlines an ongoing social dialogue. In this dialogic movement, conflict is a milestone, as different ideologies, social positions, and life experiences shape how language is used and performed.

Since meaning is socially located, it reflects and reinforces power structures, eventually challenging and transforming them (Menezes de Souza, 1995). Accordingly, language is a vehicle of power relations and a terrain of resistance, revealing that meaning-making is a politically and ideologically charged process. Drawing on the concept of arenas of conflict (Bakhtin, 1981), academic writing performed via artificial intelligence is portrayed herein as an arena of meaning-making, reinforcing that language is a phenomenon embedded in political, ideological, and social realms.

The global political scenario was facing the impact of the post-truth era, which could be seen in the United States and Brazilian presidential elections of 2016 and 2018 respectively, when the force of generative artificial intelligence took over the world media discourse in 2022. Such a frenzy occurred due to the unprecedented affordances provided by what we could consider the most well-known large language model so far, ChatGPT. At first, it seemed as if artificial intelligence was finally perceived as a concrete element in society. Still, the intersection of artificial intelligence and language education has been explored for quite a long time (Cope; Kalantzis, 2024).

I defended a Master's thesis with a focus on digital literacy practices in the teaching of the English language (Santos, 2021), which led me to decide the path to follow in the PhD endeavor. That was when the research group I am part of switched to artificial intelligence discussion. At that time, the commercial version, later referred to as ChatGPT, had not been released yet, but we started exploring and discussing the features of the already developed versions, GPT-2 and GPT-3. Consequently, we published a paper (Boa Sorte et al., 2021) that became a pioneer and reference in Brazilian literature discussing possible future scenarios of large language models in qualitative studies and language education.

Showcasing the most dramatic social impact of artificial intelligence in Education to date, the release of ChatGPT provoked diverse reactions from media, parents, teachers, scholars, and students. Since then, the pros and cons of using chatbots have flooded the content of TV news, podcasts, and newspapers. Such a scenario could bring forth the perception that the connection between artificial intelligence and writing is new, but that is not what the literature reveals (Cope; Kalantzis, 2024). Artificial intelligence has influenced the practice of translation for a long time, for instance, and more recently the practice of writing through Automated Writing Evaluation (AWE) systems.

In the light of that, this research emerges from the loophole perceived in Brazilian literature concerning the teaching of English language writing and artificial intelligence focused on automated feedback. The emergence of generative artificial intelligence, especially after the release of ChatGPT, caused the work with AWE systems to be put aside in Brazil even before it was consistently shed light upon. Briefly, the main difference between generative artificial intelligence tools and AWE systems is that the latter does not produce texts from scratch based on prompts, that is, users have to write the first version and the systems provide feedback focused on spelling, grammar, and register. Conversely, some AWE systems, such as Grammarly, have included a generative text feature in their updated versions. For data collection, the version did not offer generative affordances.

While generative artificial intelligence tools generally cause extremist reactions, AWE systems seem to have already gone past the pessimist waves by showing that relevant and consistent work can be done through the use of platforms, especially as students are effectively demanded to write. Such a phenomenon can be attested by the considerable literature on AWE systems, especially in China and England, which shows that many universities have developed their systems (Wilson et al., 2021; AI-Inbari; AI-Wasy, 2022). All in all, this dissertation fills a relevant gap in the studies of writing in English language education in Brazil.

The teaching of writing and academic writing is a solid field in language studies with vast literature. However, it has always seemed that it is considered the last stage of language teaching, as it is usually presented as the final chapter of language teaching manuals or the last section in elementary textbooks. Likewise, it has always appeared to be an element that people have difficulty engaging in or even a skill normally put aside. This scenario has been disrupted, to a certain level, since writing discussion has transcended the university walls and caught some attention due to the development of generative artificial intelligence systems.

I taught academic English language writing to college students as a substitute professor in 2021, which was a relevant element that made me consider focusing on artificial intelligence and writing later. The basic requirements for the course included canon and contemporary issues of writing, e.g., topic sentences, thesis statements, and paragraph development, which are relatively expected in a writing course. At that time, I was involved in using technologies for language translation, and I dedicated a considerable part of the semester to discussing that topic. On the other hand, I found my teaching practice disappointing, as I realized that there would be much more to explore concerning writing and artificial intelligence.

Shortly after finishing that writing course as a substitute professor, ChatGPT was released. Consequently, the world started pondering about it, primarily from apocalyptic and contemplating perspectives. However, I had already read enough about automated systems and natural language processing to realize that such consternation resembled sci-fiction movie plots instead of the world reality. ChatGPT was at the right spot and timing when it emerged, and it was the perfect heading for newspapers, TV news, YouTube channels, and journals. That phenomenon caught my attention since the affordances provided by natural language processing such as writing feedback were more relevant to me than translating texts and writing articles from scratch.

This perception allows for a brief explanation of what artificial intelligence is and how it cannot be a one-size concept. Broadly, artificial intelligence has been defined as human-like intelligence performed by machines and systems (Russel; Norvig, 2021). That said, artificial intelligence is not entirely human intelligence as both share similarities and differences in application and level. In this sense, expressions such as human-level, human-like, and artificial intelligence are considered misleading as they mystify computer intelligence (Proudfoot, 2010; Granham, 2018).

Human beings are cognitively capable of performing highly complex thinking as a natural process. On the other hand, robots and chatbots might perform vast amounts of

processes if they are trained to do so. That means both sides have their credit when it comes to being intelligent. Conversely, the presence of artificial intelligence in society has not only been about advancements. Data is currently considered the new petrol, and we have seen the emergence of a new form of imperialism that explores minorities in exhaustive and mentally harmful ways, which is referred to as digital colonialism (Kwet, 2019).

Culturally speaking, much has been said about artificial intelligence in society for the last decades. Part of the social discourse is influenced by media and cinema representations, as artificial intelligence has been portrayed in movies since the 1960s (Santos; Boa Sorte; Barros, 2022). Especially for the last two decades, it has been facilitated by the development of bank systems and social media platforms. However, it seems that only after the release of ChatGPT that society realized that we were already immersed in artificial intelligence processes.

A considerable part of society truly grasped the immersive experience of artificial intelligence after the advent of ChatGPT, despite having long relied on AI-powered tools for diverse everyday demands, such as predictive algorithms in streaming platforms to recommendation engines in e-commerce. This sudden awareness was not spontaneous, as it was fueled by a powerful lobbying effort and intense marketing campaign organized by OpenAI, which positioned ChatGPT as a revolutionary affordance (Bender, 2022). Thanks to the accessibility and apparent intelligence of the tool, society embraced the experience with fascination, becoming part of a large-scale feedback loop as users fed the system with interactions which refined the platform's capabilities.

Such a widespread enthusiasm has narrowed the understanding of the true breadth of the artificial intelligence field. Associating artificial intelligence exclusively with generative tools of text and image-based framing overlooks decades of development in other domains (Boa Sorte et al., 2021). Artificial intelligence encompasses a vast array of technologies beyond conversational agents, ranging from autonomous vehicles on roads and rails, to robotic systems performing complex industrial and commercial operations. In Medicine, for instance, artificial intelligence allows for virtual simulations in medical training, assists in robotic surgeries, and enables telemedicine solutions (Bush, 2018; Davenport; Kalakota, 2019; Alli; Hossain; Das; Upshur, 2024). It also enhances crop monitoring, predictive maintenance, and resource management in agribusiness (Rosa, 2011; Taulli, 2020). Therefore, the field of artificial intelligence is a diverse ecosystem of digital tools across varied sectors in contemporary society.

Recently, the landscape of academic writing has evolved, mainly influenced by technological advancements and a push toward inclusivity and accessibility. Digital tools facilitate collaborative writing, peer review, and publication, while open-access platforms democratize knowledge. Additionally, there is a growing recognition of the value of diverse voices and perspectives, leading to a broader range of topics and methodologies being explored (Wilson et al., 2021). These changes reflect the dynamic nature of academic writing and its potential to be adapted to the needs of a globalized and interconnected scholarly community.

One example of such a development in the field is the use of AWE systems for the review and revision of texts in English. AWE systems are software tools designed to assess and provide feedback on written texts, leveraging natural language processing and machine learning technologies (Hockly, 2019). These systems evaluate various aspects of writing, including grammar, syntax, organization, and style. AWE systems, e.g., Grammarly, Turnitin, and Criterion, analyze text based on predefined criteria or large datasets to identify errors and offer suggestions for improvement. Their primary aim is to assist writers in enhancing the quality and precision of their writing projects.

The primary use of AWE systems spans educational, professional, and personal contexts. In academia, AWE systems are employed to help students refine their writing skills by providing immediate feedback on assignments and enabling collaborative revisions (Jiang; Yu; Wang, 2020). In professional settings, these systems assist in producing polished and error-free reports, emails, and other formal documents. For individuals, AWE systems help in everyday communication, ensuring grammatical accuracy and stylistic consistency (AI-Inbari; AI-Wasy, 2022). The overarching purpose of these systems is to promote better writing practices, save time during the editing process, and support users in developing language competence.

Popular examples of AWE systems include Grammarly, which focuses on grammar, tone, and style, Turnitin's Revision Assistant, which offers detailed suggestions on structure and coherence, and Write & Improve which provides ready-to-use writing tasks. Criterion by ETS is another notable example, widely used in educational contexts to assess essays based on standardized rubrics. Although AWE systems are limited, especially in understanding nuanced arguments and creative writing, they have transformed how feedback is delivered, making it accessible and instantaneous (Jansen et al., 2024). By bridging the gap between human expertise and machine efficiency, these systems empower users to achieve higher levels of proficiency and confidence in their writing.

The focus on writing through automated feedback has not been prominent in the Brazilian literature on English language teaching. Such a topic emerged in research proposals before the climax of generative artificial intelligence tools like ChatGPT, but it seems that it has been put aside even before its peak. Across the few examples in Brazilian studies, there was the work with automated feedback through a posthuman perspective (Nunes, 2019), where the results revealed the improvement in communicative skills as well as the emergence of hybrid learning contexts. Additionally, the analysis of the writing of abstracts in English (Júnior, 2007) and in Portuguese (Souza, 2011) revealed the work with automated feedback for writing in Brazil, especially in the field of Computer Science.

Correspondingly, this dissertation emerges from the Research Group *Technologies, Education, and Applied Linguistics* (TECLA), which has been discussing the impact of artificial intelligence and algorithms in society and education (Boa Sorte; Gonçalves; Santos, 2024; Santos, 2024; Boa Sorte, 2024a, 2024b). The research focuses on academic English language writing, artificial intelligence, and meaning-making. The discussion provided herein is based on the theory of meaning-making, which entails a triad with conceptions of languages and social context as arenas of meaning. Therefore, when thinking of meaning-making processes, it is required to consider technology use as a hybrid situated practice.

Currently, the teaching of writing skills is not restricted to typographical texts nor mastering electronic and digital devices, but to the intertwining of diverse modalities of language (Cope; Kalantzis, 2020; Cope; Kalantzis; Zapata, 2025). It is relevant to mention that literacy studies have long suggested the interconnection of modalities and that the separation in technical and cognitive elements of language practices from ideological issues was more of a misconception in earlier literacy studies, as stated by Street (1995). Thus, meaning-making practices are always inserted in conflicting arenas of social power.

The theory of meaning-making was adopted as it perceives scientific activity through multifaceted, unstable, and critical lenses while considering what is produced outside Academia (Monte Mór, 2013). Therefore, this perspective entails critique as opposed to the canonical and watertight concepts of criticism. Critique envisions meaning-making processes as an opportunity to destabilize and unveil the engine of absolute truths; that is, as a process of reading the world while we are reading ourselves (Menezes de Souza, 2011).

By adopting the theory of meaning-making, the intertwining of artificial intelligence and academic English language writing is considered an arena for creating language practices (Marques; Jordão, 2022). Therefore, this paradigm helps to problematize the canonical

perception of language, commonly perceived as a fixed phenomenon, and it is also an endeavor to conceive language as a social practice of meaning-making. In addition, the theory is constructed throughout this dissertation, which means that the main topics, such as academic writing, artificial intelligence, AWE systems, and meaning-making are constantly intertwined with the data.

By considering the elements mentioned earlier, this research aims to analyze the meanings undergraduate students make about using Automated Writing Evaluation (AWE) systems and writing academically in English to understand their meaning-making processes in such processes. In the face of that, this research answers the following questions: How do the participants deal with their English learning process? What do the participants say about writing in English? What do the participants say about using AWE systems?

The thesis statement defended herein is that artificial intelligence, through the use of AWE systems, unveils and unbalances education in topics such as evaluation, which has been historically used as punishment instead of a compelling learning phenomenon. Moreover, the fact that education has not been known as effective in teaching how to ask questions in opposition to only answering granted correct answers. In addition, AWE systems seem to be well accepted in university settings, according to the literature, and learning how to write based on classical writing concepts is still considered relevant when developing as a researcher. All things considered, however, writing is primarily a subjective practice and a site of meaning-making processes.

Methodologically, this is a qualitative endeavor (Merriam, 2009) to investigate writing as a social practice of meaning-making (Cope; Kalantzis, 2020; Kalantzis; Cope, 2020). The theory of meaning-making was adopted both due to my commitment to it (Santos, 2022; Santos et al., forthcoming) and based on its relevance in the current English language teaching literature (Cope; Kalantzis; Zapata, 2025). Moreover, this theory encompasses a critical and qualitative perspective of analysis and incorporates a social dimension into writing.

As for the data collection, it was performed through a teaching intervention in a writing course for undergraduate students at the Federal University of Sergipe. Data were collected through the document examination of the course syllabus, short-term papers, a questionnaire, and assignments performed by the participants on the platforms Write & Improve by Cambridge and Grammarly. The method of data analysis was based on the Teacher-Research framework (Freeman, 1998), which encompasses four main steps [naming, grouping, finding relationships, and displaying].

Naming was the first step as it encapsulates the essence of data, which is here designed as a grounded activity. Once codes were found and organized, *grouping* was the next step, which was performed a priori, that is, based on the reference theory of meaning-making. Accordingly, codes were grouped into five categories related to meaning-making functions: Reference, Agency, Structure, Context, and Interest (Cope; Kalantzis, 2020). Next, *finding relationships* across the groups was essential to articulate the data with the theory as well as to answer the research questions. Finally, the groups were portrayed in a concluding and summarizing perspective when the step of *displaying* was carried out.

This research was based on a teaching intervention focused on the use of two AWE systems. It is characterized as a qualitative endeavor based on a literature review and empirical research with undergraduate students of English language teaching at the Federal University of Sergipe. The empirical instruments were field observation, document examination of the course syllabus and students' assignments, forms, and short-term papers. The theory of meaning-making was adopted as the reference for data analysis along with the Teacher-Research Framework (Freeman, 1998). That means the elements presented herein were deeply explored in the light of a qualitative approach by considering the participants' discourses as a meaning-making process. Figure 2 showcases an overview of the dissertation:

Figure 2 - The Sections
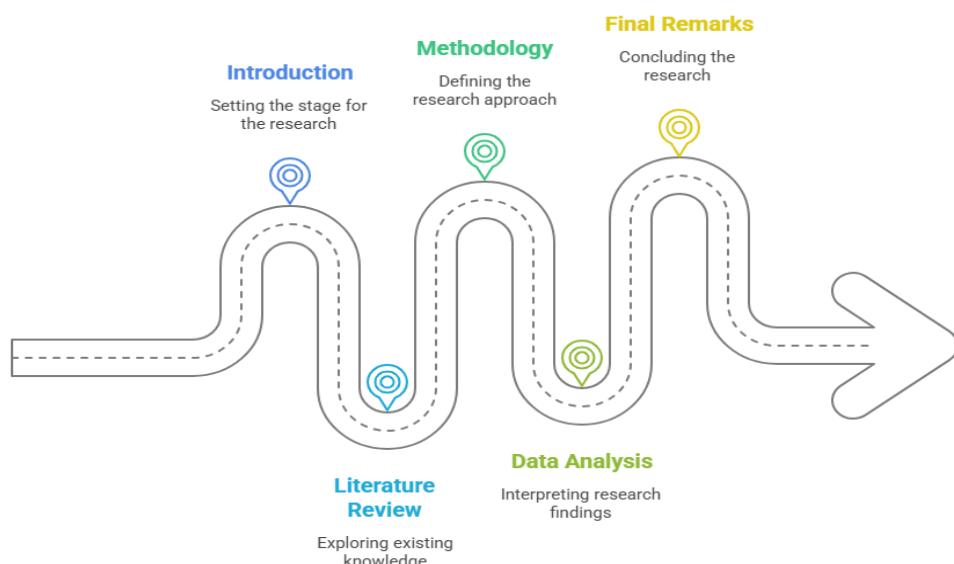
Source: Created through artificial intelligence[3]

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[3] NapkinAI. Create a map summarizing the sections of the dissertation following this pattern: 1- introduction: The gist of the research and the overall discussion; 2 - Literature review: brief theoretical discussion; 3 - Methodology: overview of theory, research instruments, field research and method of analysis; 4 - Data analysis: data description and analysis ; 5 - Final remarks: recalling the overall discussion and results. Please, add pictures

This dissertation is divided into five sections. This introduction reveals my experience in dealing with artificial intelligence and meaning-making studies and sets the gist of the investigation. The literature review section encompasses a discussion on artificial intelligence with a focus on meaning-making and AWE systems in the teaching and learning of academic writing. The methodological section introduces the research conceptions regarding theory, instruments, and analysis. The body section develops from the showcase of empirical data, which provides the emergence of theoretical constructs. Finally, some final remarks are provided as a finishing phase of the dissertation.

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that represent each section. NapkinAI 2025 version on June 10th 2025. Artificial Intelligence. Accessed on: June 10th 2025.

2 THE ARENA'S GRANDSTAND: THE LITERATURE REVIEW

"The psychological aspect of a word's meaning, as has been stated above, is not a thing, but a process — taken more broadly, as the psychological equivalent of a 'dictionary meaning' — both a thing and a process, by no means merely a thing" (Leontiev, 2006, p. 80).

As stated in the epigraph, meaning is not taken herein only as the literal expression of words but as a process which congregates both denotative and connotative perspectives towards everyday performances and interactions. Therefore, the lenses used to analyze the data collected in the empirical research are discussed across this section, reinforcing that theory is socially engaged and far from being neutral. Theory is the product of scientific work and should be streamlined as a critical endeavor of investigating the diverse realms in society. According to this, Figure 3 illustrates the analogy of theoretical background as the use of lenses through which researchers analyze data:

Figure 3 - The Theoretical Lenses of Meaning

Source: created through artificial intelligence[4]

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[4] OpenAI. Create an image of an ancient Roman-like stadium emphasizing the arena's grandstand, where diverse people are looking at the performance stage wearing binoculars and magnifying glasses. There is also a windy flag with the expression "Arena of Meaning-Making". GPT-3.5 version on June 10th 2025. Artificial

A literature review summarizes knowledge on a particular topic, especially through examining books, papers, articles, and book chapters. There are different types of literature reviews, but they are all concerned with showcasing key elements or ideas that represent what has been said on a given topic (Fink, 2014). Most literature reviews incorporate varied perspectives, such as argumentative, integrative, historical, methodological, systematic, and theoretical ones. The literature review implemented herein differs from a mapping of publications where a summary of each article is provided. This dissertation considers the main topics from the publications to discuss theories and concepts related to the research aim.

This section gathers publishing on the main concepts guiding the analysis: Academic writing and the teaching of writing; Artificial Intelligence with a focus on natural language processing, machine learning, deep learning, large language models, and platformization; and meaning-making with a focus on agency. It provides a whole section that returns to the research questions: How do the participants deal with their English learning process? What do the participants say about writing in English? What do the participants say about using AWE systems?

2.1 Academic writing in English and artificial intelligence

First, it is relevant to consider the discussion on artificial intelligence through a lens of technology analysis as a whole, which requires locating it as a phenomenon that evokes dilemmas (Lemos, 2021). Similar to any other technological device that emerged throughout the History of humanity, systems and tools driven by artificial intelligence provoke impact because they create and adapt social practices, then streamlining everyday conflicts (Nosengo, 2008; Lemos, 2013). Therefore, discussing such topics in light of meaning requires the ability to constantly oversee them as socially and historically embedded.

The social practice of writing has been historically used in different contexts, meaning varied things for each individual. Depending on the context, writing can be a hobby, a profession, or an element of a community of practice (Wenger, 2006). In movies and novels, people metaphorically use writing to hide themselves, even though this act leaves fingerprints through which they can be occasionally revealed. On the other hand, writing can also be a mountain to climb during cold weather, and that is when writing is mostly a stranger. This

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Intelligence. Accessed on June 10 th 2025. Even though diverse people were requested in the image, it was designed illustrating mostly white men. This image was kept herein like this to showcase how the algorithms represent ideologies and power relations in society.

happens because writing has been labeled almost as a separate communicative skill as if it is unnatural.

Writing is learned and developed as the other language abilities most people deal with in social life. Even though some of us can hear and see from an early age, listening to people and visualizing things are also learned skills. We also develop reading skills, but we assume they are more natural than writing, even if we constantly need to write daily. This is why writing is conceived and analyzed herein as a multimodal skill, as we make meanings daily by writing in multimodal ways on social media and cell phone conversations, for instance.

As many might ponder, writing is not a stranger, but it is not always noticed as we engage in meaning-making processes. We could argue that academic writing has been historically put aside as something only intelligent people do. Discussing writing demands awareness of political and social power, mainly when we deal with writing in English. Such language has been identified and accepted as a mediating bridge through which researchers can spread their contributions. However, this is not a random characteristic but an imposed one. Submitting papers to journals where English is the primary language means being aware that every single convention of academic English language writing should be followed.

Academic writing has traditionally referred to research-like compositions and those used to measure and assess language proficiency. Teaching writing for academic purposes has solid foundations and vast literature on which researchers can rely (Arnaudet; Barrett, 1981; Zemach; Rumisek, 2005; Savage; Shafiei, 2007; Herrington, 2009; Paltridge, 2009). If one considers that writing demands practice and aims at deepening their knowledge, they would undoubtedly find references to guide them in every step of such practice. Nevertheless, academic writing is also a display of power relations (hooks, 1994; Smith, 2023). This is why I transgress the impositions of English writing conventions by positioning myself in the first person during most of this dissertation.

Contents such as topic sentences, thesis statements, paragraphs, linkers, modifiers, and collocations, to mention a few, are usually addressed in writing textbooks. Apart from that, though, relevant attention has been devoted to style, which is how a piece could reveal the author's writing signature. Some books address text genre and discourse by teaching students how best to fit the purpose of each writing context and demand. These issues are relevant as they reveal the meaning-making process performed by the writer, which entails their writing style choices, tone, and reference to a target audience.

On the other hand, contemporary digital platforms have offered emerging ways through which people can engage in academic writing. If learning how to write academically

and receiving feedback on a piece was mainly connected to having a peer, nowadays platforms teach you how to write and give you automated feedback. Conversely, it might be pondered: Is the teaching provided by those platforms different from what the teaching of writing has classically been for the last decades? By discussing artificial intelligence and writing, this section paves the path to analyzing the current scenario of writing in the face of the affordances of automated feedback.

Even though academic studies have focused on artificial intelligence for quite a long time, most of society has noticed that artificial intelligence is real and has impacted daily life only recently. It seems that after the ChatGPT release, parents, teachers, and policymakers, to mention a few, finally discovered that artificial intelligence is not only a futuristic element of sci-fiction movies. Artificial intelligence is now an arena of meaning-making, and consequently a plethora of dichotomies such as pros and cons, and it has been paving the flow of discussion on the practice of writing in society.

In a recent newspaper article entitled "Signature Moves: Are We Losing the Ability to Write by Hand?" (Rosen, 2025), the writer Christine Rosen examined the decline of handwriting in the digital age and its broader implications. She argued that as humans increasingly rely on typing and swiping, they risk losing not only a fundamental skill but also the cognitive and sensory benefits associated with manual writing. Furthermore, she emphasized the historical and personal significance of handwriting, noting that it serves as a tangible connection to the past and a unique expression of individuality.

In another recent newspaper article (Beesley, 2025), poet and singer-songwriter Luke Beesley reflected on the personal and creative significance of writing by hand, particularly with a pencil, as a means of preserving authenticity in an era increasingly dominated by artificial intelligence. The article entitled "I am writing this with a pencil — it could be an author's last line of defence against AI" suggests a counter reaction towards the use of artificial intelligence in writing. He recounts his lifelong habit of drafting by hand, emphasizing the tactile pleasure and cognitive engagement it offers.

Beesley (2025) expressed concern over artificial intelligence's growing role in literature, considering the challenges it poses to originality and trust in creative works. He observes that some literary submissions now require authors to declare non-use of artificial intelligence, raising questions about how to verify human authorship. Drawing on historical literary hoaxes, Beesley argued that the imperfections and nuances of human-created drafts serve as tangible evidence of genuine creativity, suggesting that handwritten texts may become a vital marker of authenticity in the future of literature.

Even though these issues are relevant to ponder when developing a discussion on the practice of writing, they also leave the impression that writing was a perfect and solidly performed social practice before the emergence of generative artificial intelligence. The difficulty in engaging students with writing has been reported for a long time (Hedge, 2002; Santos, 2012), the demand for establishing the practice of writing as a meaningful task for students (Nunan, 1990; 1999; Paiva, 2012), as well as deciding on the adequate materials to use and the burden of providing constructive feedback for a large number of students (Hedge, 2001; Raimes, 2002; Paiva, 2012).

Additionally, the practice of writing has been reported as time-consuming and emotionally demanding, especially in academic settings. Such a scenario has projected what has been called as the impostor syndrome (Hutchins, 2019; Casanave, 2019), as undergraduate and graduate students feel that they are not capable of performing well in writing or that they do not deserve to be called academics when they finish their degrees. In this sense, the affordances provided by artificial intelligence could represent a set of practices to consolidate writing as a solid multimodal practice and embedded in the perspective of social justice (Paiva, 2012; Boa Sorte, 2018; Boa Sorte; Vicentini, 2020).

Regarding the impacts of algorithms and information delivery, headings from Time Magazine exemplify how artificial intelligence has been reported in communication. Time Magazine published a report on Kenyan workers receiving less than 2 dollars per hour to filter toxic content from the ChatGPT database. Likewise, this magazine article brings forth the domination of another nation or region by those who own political and economic power (Coleman, 2019; Kwet, 2019). As reported by Time Magazine, companies exploit developing countries, mainly focusing on minority groups, to increase profit by paying the minimum wage and providing inadequate working conditions.

Such social elements regarding the presence of artificial intelligence in society have led to a discussion referred to as digital colonialism (Kwet, 2019; Cassino, 2021). As data is considered the new petrol in the 21st century, we have experienced the power of capitalism and a new form of imperialism that explores minorities in exhaustive and mentally harmful ways (Silveira, 2021; Machado, 2021). As a current example, Big tech companies have hired workers, especially from developing countries, to deal with filtering data and content that seem to be offensive or violent (Avelino, 2021; Boa Sorte, 2024). As a result, these workers start developing mental issues as they constantly see and hear violent content and do not have adequate psychological support from the companies.

Digital colonialism refers to the emerging form of domination in which technologically advanced nations, primarily in the Global North, control data and digital infrastructures in ways that echo the historical patterns of colonial exploitation (Kwet, 2019; Silveira, 2021). This phenomenon intensifies the geopolitical and economic divide between the Global North and South, as countries in the South, many of which are formerly colonized nations that fought for independence, find themselves once again subjected to external dominance (Cassino, 2021).

However, instead of land or natural resources, the resource being extracted today is data. Digital platforms and tech companies in the North dominate the global digital ecosystem, collecting vast amounts of user data from the South without considerable local governance or equitable benefit (Avelino, 2021; Silva, 2021). As a result, the North continues to profit from the data economy while the South remains in a position of dependency and limited agency, reinforcing a digital hierarchy historically built.

In this context, data has become the new petrol, a critical resource fueling the engines of the 21st-century digital economy. Like petrol during the industrial era, data is now extracted, processed, and monetized, often without regard for the sovereignty or developmental needs of the countries from which it originates (Silveira, 2021). The digital infrastructures of the Global South are frequently shaped and controlled by foreign tech firms, leading to a new kind of colonization that bypasses traditional boundaries while perpetuating old power dynamics (Cassino, 2021).

The lack of consistent data protection laws, digital infrastructure, and local ownership in many Southern nations means that data is continually captured through the use of hegemonic platforms and systems, contributing to wealth and innovation in the North while deepening structural inequalities (Cassino, 2021). In addition, digital colonialism perpetuates colonial social realities through the offering of cruel and emotionally-demanding job positions, especially in developing countries (Kwet, 2019; Machado, 2021). This digital exploitation challenges the political and social scenarios, raising urgent questions about autonomy, justice, and privacy in the digital age.

Parallelly, misinformation and disinformation have been trending as social media started impacting contemporary elections. As generative artificial intelligence advances, we observe how fake news and content infiltrate social relations. The Guardian addressed the topic of fake content by reporting that ChatGPT mentioned an article that had never been published by the newspaper. If we consider that fake news has existed since the pre-internet era (Santaella, 2018; Boa Sorte; Santos, 2021), the problem is not necessarily the machine but

how human relations are projected through their use, especially now that society is immersed in platforms.

Speaking of platforms, The Guardian announced that it would cease posting on its official editorial accounts on X [formerly Twitter], citing the platform's increasingly toxic environment characterized by far-right conspiracy theories, racism, and its influence on political discourse, especially during the recent U.S. presidential election (The Guardian, 2024; BBC, 2024). The newspaper believed that the negatives of maintaining the presence on X outweighed the benefits, which led to focusing on the newspaper website. While users could still share Guardian articles and the platform may occasionally be used for embedding content in live news reporting, the organization encouraged readers to access their journalism directly through their website.

This recalls a relevant discussion on the presence of platforms in society, and how past issues can be potentialized through them. A platform is defined as a digital environment that functions via a programmable architecture to provide users with diverse services (Van Dijck; Poell; De Waal, 2018). Platforms do not only impact locally since globalization has been enforced and potentialized after the spread of internet access. Consequently, the development of a new platform has the potential to change or disrupt local and global social contexts, e.g., the current scenario of driving and hospitality services after the implementation of Uber and Airbnb.

Occasionally, not only the commerce and tourism sectors have been impacted by platforms, especially now that generative affordances started permeating graphically the field of education. Generative artificial intelligence has been around long before the boom of ChatGPT, and it has been intensely developed and studied in the academic writing field. In this sense, AWE systems are central in displaying such a scenario, as they represented for quite a long time the potential of artificial intelligence, and now showcase how needed it is for researchers to take advantage of the current interest in arguing about such a topic. Therefore, this is the time to emphasize reflections through critical lenses and go past the idea of returning to a pre-cell phone and internet era.

Historically, the work with intelligent machines moved in a new direction after John McCarthy coined the term *artificial intelligence* at a conference at Dartmouth College, New Hampshire, in the 1950s. Since then, the field has transcended many barriers in developing computers capable of performing tasks such as language understanding and data processing (Granham, 2018). For part of the literature, the expression *artificial intelligence* is said to be misleading as it mystifies computer intelligence (Proudfoot, 2010). Concepts such as

human-level and human-like intelligence motivate an everlasting dichotomy between humans and machines, contributing to widespread catastrophic perceptions of digital environments and tools in society.

By and large, artificial intelligence is divided into two main realms, that is, weak and strong. Weak artificial intelligence has been the most developed realm so far, and it means that computers can apparently behave and act intelligently, but it is a matter of programming. On the other hand, strong artificial intelligence is still a developing subfield, and it entails that computers understand data and perform cognitive actions (Neapolitan; Jiang, 2018). Such realms of artificial intelligence envision computers simulating a mind, which is the weak one, and computers having a mind, which is the strong one.

If we consider some movies that have portrayed artificial intelligence for decades (Santos; Boa Sorte; Barros, 2022) and the tension caused by the release of ChatGPT (Boa Sorte, 2024; Santos, 2025), that is relevant to ponder. On the other hand, especially considering the theory of meaning-making, we constantly make and remake meanings, so the same goes for artificial intelligence in society. Some current elements of artificial intelligence have made the term gain other meanings, turning artificial not necessarily the opposite of natural things. Artificial intelligence has become natural to most people, so they only started noticing it after a trending platform was graphically reported worldwide.

Artificial intelligence has been operating computers and bank systems, for instance, long before ChatGPT. Such systems have been used in healthcare in many countries, even though patients have not even noticed that. Even when talking about writing, artificial intelligence has been assisting students and teachers with writing feedback and translation for decades through institutional platforms. Thus, ChatGPT or Google Translator do not summarize the artificial intelligence iceberg.

All in all, artificial intelligence can be defined as the group of processes through which computers perform to solve mathematical problems or tasks. These tasks are mainly performed by using elements of machine learning, and currently with a focus on deep learning in the generative subfield. Artificial intelligence is constantly based on the findings of Cognitive Science, especially when it focuses on a strong domain of intelligence (Neapolitan; Jiang, 2018). That said, artificial intelligence is not a one-sided term but a broad concept with different bushes, mainly operated by machine learning and deep learning. The standard connection between humans and machines occurs because computer functioning has been historically associated with the human brain.

As mentioned, neither the human-level nor the human-like approach towards artificial intelligence is consensus in academia (Proudfoot, 2010; Granham, 2018). However, one element connects human and machine intelligence: the process of learning something. While humans learn through social interactions, computers learn through training. That means, for instance, that algorithms are trained to predict and perform tasks. It is artificial intelligence, then, because it is limited to commands. A computer will not perform an activity that it was not equipped or trained for, while humans are governed by subjectivities and social context.

Both intelligences have their potential and limitations, but reporting these elements is not the focus of this research. This dissertation discusses the affordances of artificial intelligence as a motor to developing academic writing. The field considered for this research is artificial intelligence, especially concerning natural language processing. Therefore, the aspect of artificial intelligence explored herein is the systems developed to provide writers with automated feedback.

AWE systems have been prominent in engaging with academic writing. Even though chatbots, such as ChatGPT, have been catching people's attention thanks to their potential to write whole documents, tools mainly focused on offering feedback and guidance have been way more accepted in academic settings. Such a phenomenon reveals that understanding the writing process is still relevant and flagrantly required when developing as a researcher. If we consider YouTube videos on writing, for instance, classic writing topics are still the ones with more views.

AWE systems have been on the spot since universities worldwide started including them in grading and enrolling processes. However, AWE systems have existed since the 1960s, especially in translation through natural language processing (Hockly, 2018). On the whole, AWE systems provide feedback to prompts using algorithms and statistical modeling, and the scoring mainly focuses on suggestions to improve word usage, collocations, text complexity, and syntax, to mention a few examples.

Systems such as Criterion, Write & Improve, Grammarly, My Access!, and Write to Learn are some of the most known and used AWE systems. Correspondingly, technology-based writing intervention has shown potential due to timely and ubiquitous feedback. On the other hand, challenges in integrating such software into writing education have emerged, especially concerning how students deal with scoring and feedback on essays (Wilson et al., 2021). MI Writer is an example of a digital environment developed to provide writing feedback; when integrated into education, MI Writer provides students and teachers

with potentialized peer-review processes (Wilson et al., 2021). In the face of that, the peer-review process might be decided by the teacher or in agreement with students.

Accordingly, prompt-to-prompt activities and feedback are frequently used in writing software. As a result, AWE systems have shown to be flagrantly helpful for teachers in assisting students at advanced levels, for instance, when the amount of writing is significantly high (Zhang; Xu, 2022). In this sense, the feedback and the scoring tend to be based on the development of ideas, word choice, sentence fluency, style, organization, and language conventions. Instructions are provided through suggestions on how to improve sentences and paragraphs.

Even though AWE systems have the potential to detect mistakes, they still lack the accuracy of content, which makes it necessary for teacher feedback to get integrated with the use of the software. Since instructions are provided in terms of suggestions, students are expected to learn how to write, be self-aware of their mistakes, and understand how to proceed after receiving writing feedback. Parallelly, feedback has been reported as an activity that supports the revision process of texts (Meyer et al., 2024; Graham et al., 2023), with emphasis on being timely, contextualized, and personalized to modify the learning process and improve writing skills.

Editing essays has been a classical chapter in varied writing textbooks for decades. Editing means both correcting structural errors concerning grammar and cohesion or coherence. In textbooks, editing and self-editing are usually described as a personal practice, as teachers or classmates work on a peer-review process that leads to a last self-editing one. AWE systems have reinvented this process by providing novice and experienced writers with automated feedback, which reviews and suggests ways of improving a composition.

Since AWE systems are based on corpora of texts, they target linguistic features such as word order and syntax, especially when these elements influence the argumentative and semantic domains of a text (Meyer et al., 2024). Accordingly, the AWE systems are grounded in trained data to predict human scoring based on linguistic features that encompass semantic and argumentative elements. AWE systems are as efficient as humans in assessing essays (Meyer et al., 2024; Ramesh; Sanampudi, 2022), as can be seen in internet-based proficiency exams. There is also a difference in how the automated feedback is used and when it is provided, as some institutions and teachers prefer to use it before and after human feedback.

Correspondingly, institutionalized automated feedback is commonly used as complementary to human feedback, especially for large groups of students in a classroom or when there is a need to save time. A relevant aspect in choosing a writing platform for

feedback is the design and scope of feedback, as it should be concerned with what is expected both by the institution and teachers, for example. Even though diverse platforms can provide personalized feedback, each personalization affordance changes based on design and scope. This is why, especially in Chinese school settings, specific platforms have been developed by higher education institutions based on regional expectations towards English writing feedback (Zhang; Xu, 2022).

Recent studies have compared the accuracy of self-editing, peer-editing, and automated editing (AI-Inbari; AI-Wasy, 2022; Link; Mehzard; Rahimi, 2020). Such research projects usually implement two stages of investigation via tests, e.g., students are assigned to write on a topic and receive teacher feedback; in another round, students write on another topic but then receive automated feedback. It has been said that there is no considerable difference between the final projects; additionally, lower-level students did not report relevant perceptions while using AWE systems. That brings forth the issue of context, where more proficient students tend to know more writing conventions and can easily benefit from automated feedback.

2.2 Meaning-making and its relation with writing in AWE systems

Humans have always tried to understand what happens in their social groups. Consequently, they make meanings of what they see, hear, touch, and feel according to their language repertoire and life experiences. In this sense, Santos (2022) recalls the Allegory of the Cave by Plato where the moving shadows made cave people believe that trees were monsters or big creatures; actually, they were trees moving and being projected in the cave walls (Platão, 2015). Such a metaphor is useful for portraying meaning-making as an unstable, conflicting, and changing social practice, a perspective that also dialogs with Psychoanalysis (Freud, 1914/1980; Freud, 2010) and the attitude of reading ourselves (Menezes de Souza, 2011). Accordingly, the process of making meanings is performed based on our social interactions with the environment, other people, and varied text modalities.

The discussion on meaning uncovers the dilemma of meaning as a thing and a process, resulting in a psychological structure (Leontiev, 2006a). Meaning can be a thing when we think of signs, which goes into a representational level, but not only that, as it is also a process bringing forth communication and interpretation. Correspondingly, meaning differs from sense as the first entails a psychological category that is subjective and individual, and the latter encompasses a logical category that is a human-common property, a cognitive ability (Leontiev, 2006b).

Likewise, meaning is socially influenced and constructed in a way that, even though it is subjective, it is embedded in ideology and experience. Accordingly, sense refers to a denotative domain while meaning relates to a connotative spectrum of interpretation (Leontiev, 2006b). This way, sense is more concerned with comprehension than interpretation, or as a cognitive ability to decode and interact with a representation. When perceived as psychological structures, however, meanings entail the idea of movement (Leontiev, 2006c), even though they gather cognitive elements of sense, it is mainly constructed as a result of experience and interpretation.

For a long time, the idea of making meanings in language teaching was mostly considered through the use of verbal texts in the classroom. In this sense, students were motivated to apprehend meanings when interacting with texts, so that they could produce their writing pieces. This perspective encompasses that the meanings are not in the text, but they are constructed during the reading process (Koch, 2003). This is why diverse interpretations can flourish in the classroom, as each student has their own life and academic background.

Conversely, such a perspective does not neglect the fact that authors implement meanings in their texts. It only emphasizes that, in the end, the reader is the one responsible for the interpretation, especially when we think of a post-truth era. Even if the author provides facts, most readers will make meanings according to their social background, which entails beliefs, study focus, critical thinking attitude, and so on. This helps us understand that meaning-making is always subjective and personal.

Such a perspective entails that while making meanings of texts we are recreating those texts, as each interpretation might not be the same. Even though texts portray a representation of a topic, the social and cultural repertoire of the reader will direct the interpretation, showing that meaning-making is personal. This is why there is a decisive difference between comprehension and interpretation, as the first encompasses mainly identifying the codes and content, and the latter deals with impressing identity in the reading process.

Correspondingly, when meaning-making is considered, the reading process is perceived as ideological as it incorporates cultural, historical, and social realms. Although writing is focused on typographic modes herein, meaning-making is considered multimodal since the platforms of AWE entail diverse forms and modes in their interface. If we consider that icons and design influence the writing process, users face different experiences while writing in AWE systems.

The current core elements that underlie the theory of meaning-making emerged from literacy studies, especially those concerned with multifaceted perspectives on texts. In this sense, the processes of communication, representation and interpretation are multimodal, resulting in a cluster of meaning forms such as written, visual, sound, tactile and spatial modes (Cope; Kalantzis, 2020). Likewise, this perspective envisions texts as language manifestations underpinned by varied meaning functions, which cause us to constantly make meanings in an unstable cycle.

Meaning-making is directly influenced by the processes of representation and communication. Representation can be referred to as making sense or projecting information, while communication entails helping others understand such a sense (Cope; Kalantzis, 2020). Finally, representation and communication result in interpretation, an activity that is flagrantly influenced by ideology and worldview. Critically speaking, it is expected that interpretation balances what is addressed, recognizing that our worldviews are not neutral. Therefore, it is relevant to notice that every meaning-making process – representation, communication, and interpretation – is embedded in ideologies, as the sociocultural repertoire and stance of meaning-makers influence such processes.

The discussion on meaning-making is centered on interpretation as a subjective and socially located phenomenon. Consequently, meaning-making is envisioned both internally and externally, as making meanings is not only about reading the world but also about reading ourselves (Menezes de Souza, 2011; Monte Mór, 2013). In this sense, the process of meaning-making encompasses having an introspective analysis of our thoughts and actions, as they are socially embedded (Wenger, 2006). Ultimately, it is about perceiving the subjectivity intertwined in the practice of reading the world and the words (hooks, 1994; Janks, 2010). Meaning-making can be perceived as a critical practice where we reflect and occasionally change our interpretations.

Even though writing as a typographic phenomenon is central to this research, it is mainly performed through platforms. Thus, it is salient how a multimodal perspective in meaning-making is required. As we go through icons, pop-ups, and design, the writing process ends up being influenced and adapted. That means writers now have other elements to think about when they are writing. Accordingly, the grammar of multimodal texts (Cope; Kalantzis, 2020; Kalantzis, Cope, 2020) proposes five functions through which meaning-making can be analyzed. Figure 4 provides an outline of these functions:

Figure 4 - Functions of Meaning-Making
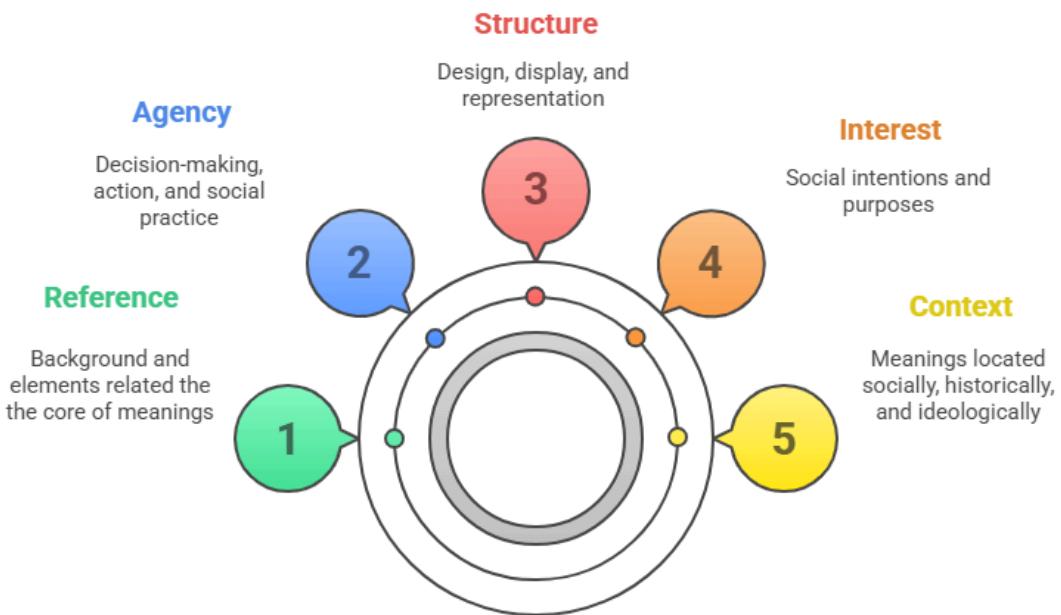
Briefly, each function entails intrinsic elements within the meaning-making process. Reference addresses identification and representation, that is, the background of the given text. Agency is a social action where meaning-makers take texts and perform social practices from them. Structure encampasses organization, design and editing, that is, it is mostly how texts are designed. Interest covers both the purposes of writers and the intentions of readers when making meanings of texts. Context means locating texts as historical, geographical, cultural and subjective elements.

In the face of the current affordances of AWE systems and large language models, it is intrinsically required to consider a multimodal perspective in meaning-making (Kress, 2000; Cope; Kalantizs; Zapata, 2025). Especially now that systems such as Open AI have developed the intersection of visual and typographic texts in high quality, such as infographics and comics, it is inevitable not to consider a multimodal perspective of meaning. Therefore, discussing writing through a multimodal perspective entails considering that meaning-making is based on varied functions and forms of meaning.

The meaning-making function of reference encompasses how individuals make and interpret meanings, which entails the identification of entities and actions in communication

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[5] NapkinAI. Create a circle with the five functions of meaning according to the following concepts: Reference (who or what it is about), Agency (what is happening), Structure (how things are designed), Context (when and where meanings happen), and Interest (what is this for). Please, add symbols to represent each function. NapkinAI 2025 version on June 12th 2025. Artificial Intelligence. Accessed on: June 12th 2025.

(Cope; Kalantzis, 2020). Reference operates on general and specific levels, allowing individuals to pinpoint instances such as identifying a person, object, or event in social context. Moreover, it facilitates the recognition of concepts, enabling the design of discourse categories and abstract ideas. As a result, reference supports the interplay between language and thought, anchoring meanings in concrete life experiences (Cope; Kalantzis; Zapata, 2025). All of this poses reference as a core mechanism in the process of meaning-making, allowing for language performance as a result of real-world referents.

The meaning-making function of agency refers to the dynamic and participatory role that individuals play in making meanings as a socially active attitude, which defines human actions and social roles. Consequently, agency is embodied and performed through gestures, voice, and image, reflecting the multimodal potential of social action (Cope; Kalantzis, 2020). By using diverse forms of expression, individuals walk through their social realities owing their identities and performing roles in interactions, which spotlights cultural and communicative practices (Cope; Kalantzis; Zapata, 2025). All in all, agency showcases the capacity of individuals to interpret and make meanings in multifaceted communities of practice.

The meaning-making function of structure speaks to the ontological level of texts. In this sense, it entails a system that creates internal coherence and establishes connections across the meanings (Cope; Kalantzis, 2020). Structure also illustrates the internal points of meanings, which can be represented by grammar patterns in verbal texts, the positioning of elements in a picture or the voice tone in auditory texts (Cope; Kalantzis; Zapata, 2025). Consequently, the function of structure provides the possibility of making conventional meanings, those graphically available in language interactions, as well as inventive meanings, which are the result of redesign.

The meaning-making function of interest foregrounds the affective and motivational dimensions that streamline the production of texts across modes (Kalantzis; Cope, 2020). In this sense, interest explains how emotions and core motivations, such as personal values, social aspirations, and ideological commitments, shape the design of multimodal texts. As a consequence, every narrative and design encompass not only language choices but also the reason underlying the discourse (Cope; Kalantzis; Zapata, 2025). Interest represents an interplay of feeling, intent, and context, as it reveals how texts are groups of emotional resonance, purposeful engagement, and inspiration.

The meaning-making function of context spotlights the sociocultural terrains where individuals and communities make and interpret meanings. Rather than envisioning meanings

as random or socially-apart elements, context situates meaning within social and cultural domains where participation, representation, and communication are pillar processes (Kalantzis; Cope, 2020). Accordingly, participating in social contexts recalls active engagement of individuals within cultural practices of language, providing opportunity for meaning-making. Representation showcases how meanings are encoded and projected, reflecting ideologies across communities. Finally, communication serves as the vehicle through which meanings are negotiated, challenged, and reshaped (Cope; Kalantzis; Zapata, 2025). Together, these dimensions underscore that meanings are made in the interplay of cultural realms, social roles, and dialogic practices.

As individuals engage in meaning-making, they might not envision the surface of meanings as they live and interact socially in everyday life. Such a surface, which here refers to a grammar of meaning-making, illustrates language functions playing decisive roles in the meaning process (Cope; Kalantzis; Zapata, 2025). Even though thinking about such a grammar is not mandatory, individuals do it casually and unconsciously as they choose their voice tone, specific words according to affinity and power relations and so on (Cope; Kalantzis, 2020). Therefore, there is an intrinsic grammar of everyday life as a result of meaning-making, reflecting that nothing individuals do happens by chance.

As we decide on the forms of meaning to use on a multimodal scope that congregates image, sound, gesture and letters, the functions of reference, agency, structure, interest, and context provoke the construction of meanings. Actually, even the choice of forms represent the process of meaning-making, as it targets the activities of communication, representation and interpretation (Kalantzis; Cope, 2020). In light of this, every act of meaning-making is embedded in functions, which allows for the constant emphasis and shifting across such functions (Cope; Kalantzis, 2020). Such a pattern happens because meanings are not only what they seem to be at the current moment but also the potential of meaning, as also detailed in the next section of methodology.

3 THE ARENA'S BACKSTAGE: THE METHODOLOGY

"Although it is possible to view language as a closed abstract system, where each sign, each meaning-bearing unit, is arbitrary and derives its meaning from its place in the system relative to other signs (de Saussure, 1972/1990), this tells us nothing about what happens when language is used. When people use language, they have to select from options available in the system — they have to make lexical, grammatical and sequencing choices in order to say what they want to say. [...] All these selections are motivated: they are designed to convey particular meanings in particular ways and to have particular effects" (Janks, 2010, p. 62).

As pondered in the epigraph, language entails various subsystems of social interaction through which humans perform their subjectivity and collective identities. Therefore, as language allows for the making of meanings, humans congregate different functions and forms of meaning to make sense of their existence in the world, always encompassing reference, agency, structure, interest, and context (Cope; Kalantzis, 2020). The same can be applied to the task of doing qualitative research, as it is socially embedded even when such a feature is not intended to take the spot of discussion. In this sense, Figure 5 brings the analogy of backstage to portray qualitative research as meaningfully intended:

Figure 5 - The Backstage of the Arena
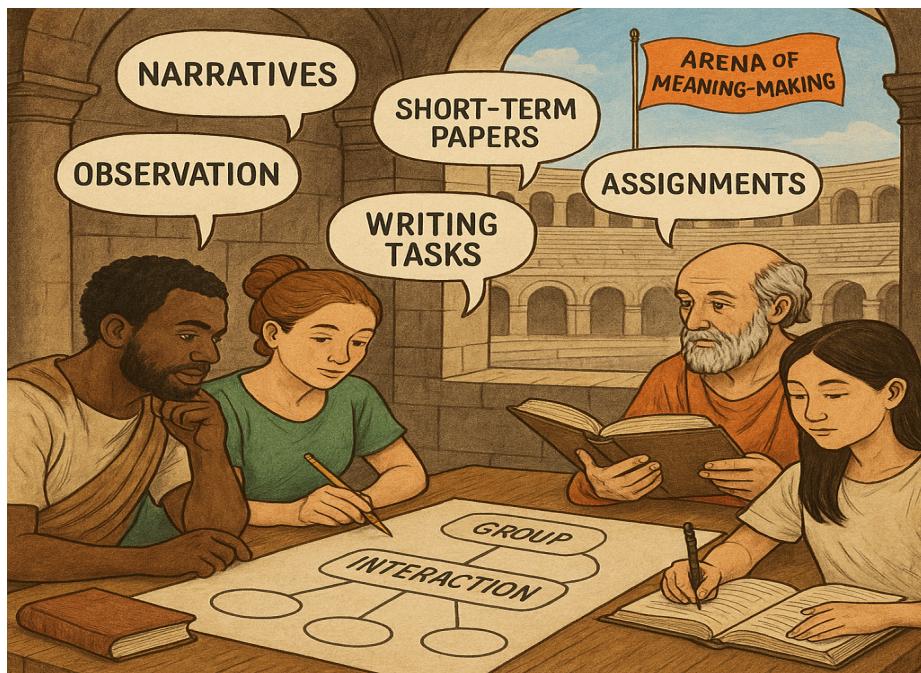
Source: created through artificial intelligence[6]

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[6] OpenAI. Create an image of an ancient Roman-like stadium emphasizing the backstage of the arena, where some people are planning strategies for group interaction with mind maps, pencils and books [including diverse ethnic backgrounds] with discourse clouds over their heads with words such as narratives, short-term papers, observation, assignments, and writing tasks. Through the windows it is possible to see the empty performance stage with a windy flag with the expression "Arena of Meaning-Making". GPT-3.5 on version June 11th 2025.

Qualitative research is constantly crossed by the meanings scholars make through their peer interactions, and as they consider social issues daily. As in Figure 5, qualitative research is the result of dialog and social encounters rather than neutral and isolated scientific work. These characteristics make us perceive how sensitive to change and adaptation qualitative researchers ought to be. This is why this dissertation projects meaning-making as the reference theory in the first place, mainly with a focus on meaning-making functions. Subsequently, the literature review discusses the intertwining of academic writing and the teaching of writing and its relation with artificial intelligence, focusing on AWE systems, large language models, and platformization.

This dissertation is ultimately characterized as a conceptual endeavor implemented through a teaching intervention. The theoretical reference, data collection, and method of analysis are introduced in detail in this section. To begin with, qualitative research is discussed and meaning-making is approached as the main theoretical background. The empirical research was based on a teaching intervention with undergraduate students of English language concerning writing and AWE systems. Finally, data were collected, analyzed, and showcased in the light of reference theories.

The Teacher-Research framework (Freeman, 1998) was adopted as the method of analysis. This method entails a descriptive and interpretive perspective, and it has been considered based on the theory of meaning-making. That means the elements presented were deeply explored in the light of a qualitative approach by considering writing as a meaning-making phenomenon and by taking a descriptive writing style. Data were collected through the document examination of the course syllabus, short-term papers, field diary, and assignments performed by the participants, especially in two automated writing platforms.

Data analysis was arranged as a tendency to intertwine elements where theory and data were constantly merged to provide the atmosphere of collective meaning. Field data were organized and analyzed by coding relevant information, arranging and rearranging the codes into a priori groups, establishing relationships across the groups, and displaying the results in maps. The design of writing adopted herein encompasses displaying the data as descriptively as possible, especially in maps.

3.1 Qualitative research and meaning-making as the reference theory

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Artificial Intelligence. Accessed on: June 11th 2025. In an attempt to portray diverse ethnicities and genders, the prompt was crafted in a more precise style.

The Allegory of the Cave by Plato is a substantial example of how meanings are made from our given lenses. The people in the cave had never experienced life outside, but they started making meanings of the shadows caused by trees, and, as they were huge, they started to fear what they had never fully lived (Platão/Plato, 2015). This is the starting point from which this research originated. Much has been said about artificial intelligence and academic writing, but we could ponder: Have most people allowed themselves to live such a profound connection both with writing and artificial intelligence?

This question has resonated in my mind since the release of ChatGPT and all the chaotic scenarios that emerged, especially as the platform shows the potential that generative artificial intelligence has for assisting in writing. I have noticed that such chaos has been quieter outside of academia as the ChatGPT is no longer a brand-new issue. After the phishing headings started being casual, academia is still considering which actual impacts generative artificial intelligence may have on writing. That is achieved through qualitative investigation, which is not neutral but is not an opinion talk on a Sunday lunch.

Qualitative research considers reality as an element socially constructed, where reality is not a single but a multiple phenomenon. That means realities result from interpretation when individuals are socially positioned and play roles according to their diverse identities (Merriam, 2009). Qualitative research also varies considerably depending on the theoretical perspective one adopts. There is no consensus on qualitative research, but a mix of critical and interpretive research has been flagrant in contemporaneity.

The theory of meaning-making understands knowledge as a socially constructed phenomenon. Thus, this theory is adopted to understand the nature of knowledge, that is, how one understands how knowledge is constructed and conveyed (Merriam, 2009). That means the theory of meaning-making is a soil where the whole research grows through specific methods, theories, and analytical processes that might converge somehow. Such a conception helps explain how a theory might impact a research project, as it influences how one will collect and analyze data.

Accordingly, meaning is considered a moving, transformative, and social phenomenon. That means we constantly reframe our meanings even though we might think they are stable. Meanings are pragmatic spheres of life influenced by reference, agency, structure, context, and interest (Cope; Kalantzis, 2020). Meanings fuel language as we interact with platforms and devices by considering our life experiences. Such a perspective has been widely defended since the 1990s, as the emergence of new tools made language studies reframe the intertwined nature of meaning-making (Kress, 2000).

Speaking of meaning and how it operates in society, we could bring the constant relation between meaning and sense. The first tends to be connected to the idea of connotation, where meaning results from cultural and individual implications of an object or phenomenon. On the other hand, the second entails denotation, as it is embraced with a common perception of what something means, that is, the factual definition (Leontiev, 2006a). Thus, meanings result from the interpretation of experiences with senses, which comprises the fact that it is moving and unstable, even though we are often led to think they are given phenomena in common sense.

In addition, meanings can be relatively shared by different people depending on their social context. However, they are always subjective and embedded in a realization process (Leontiev, 2006b). It signifies that meanings are interpretative movements that we construct based on life experience, while sense is a logical group of representations that are part of a global property. This leads us to the concept of arenas of meaning-making when cognitive and psychological structures challenge one another during interpretation.

If we consider meaning as a result of our identities on display, the idea of an arena where conflicts constantly occur is latent. As the core writer of this dissertation, I am constantly challenged to understand artificial intelligence, what my research group understands as a whole, if possible, and how the committee I report assesses my meanings. This is why this dissertation is an interplay of my readings and my positions as a researcher, a former professor of writing in college, and a PhD candidate.

The concept of meaning-making is recurrent in contemporary language theories and frameworks, as it allows teachers and students to express themselves more spontaneously. When it comes to doing research, meaning-making has been understood as a theory for analyzing data which emphasizes some key aspects such as knowledge is constructed through experiences of interaction, there is no unique truth when it comes to social life, and meanings are constructed and negotiated mainly based on power relations.

There have been multiple arenas of meaning-making around writing, as these arenas are embedded in social identities influenced by power relations (hooks, 1994; Janks, 2010; Smith, 2023). The concept of arena relates to Bakhtin's conception, where every individual makes meaning of the world around them by mirroring their peer's perceptions and creating new ones according to their position in the world (Bakhtin, 1981). It means there is always conflict at some level in society, especially in writing, where meaning is flagrantly impactful.

Thus, the phenomenon of artificial intelligence provides us with elements to reinforce that every interaction is mediated by language. If we consider interaction through language

perspective, the arenas of meaning-making become even more apparent as we envision language as power and identity. Prompting on a chatbot, for instance, might seem simple, but it can demand careful work to receive useful feedback. Thus, the relationship students and writers implement with platforms can influence their writing development.

3.2 Empirical research

As for the body section of this dissertation, the data collected through empirical research was described, analyzed, and displayed. Field research focused on a teaching intervention with a group of 26 undergraduate students majoring in English language teaching at the Federal University of Sergipe. In order to provide a fluid analysis, the participants were referred to with the capital letter "P" followed by their number on the classroom list [from P1 to P26]. The group was enrolled in an English Language V course, which mainly deals with intermediate language skills and introduces some academic writing topics. This dissertation results from using instruments to collect information and develop theoretical constructs, and it encompasses a deep connection with data.

In this sense, as to the field research, document examination was the first empirical instrument used for data collection where the course syllabus was examined. To understand how the syllabus is located concerning the undergraduate major, the pedagogical document of the major was analyzed to investigate which other courses also focus on writing skills. Subsequently, field observation happened during the whole teaching intervention, as I constantly made sense of the field. These movements helped to plan the course in light of the official requirements and students' contexts (Woodward, 2001) and with a focus on providing constant interaction (Nunan, 1990; Griffiths; Keohane, 2000).

I was in charge of covering the whole course syllabus and I planned to include writing conventions and writing activities in every class. I proposed activities where students were involved in peer-review processes in the classroom and the use of two AWE systems, Write & Improve by Cambridge and Grammarly. To have students' perceptions on the use of the AWE systems throughout the modules, I assigned short-term papers asking what writing means to them and how they felt about the systems.

The short-term paper is an adaptation of the one-minute paper technique (Angelo; Cross, 1993), where teachers and researchers ask students to write a summary of their experiences before, during, or after a class. Some researchers have already adapted such a technique (Choinski; Emanuel, 2005; Levin-Banchik, 2021; Whittard et al., 2022), especially concerning how questions are addressed and how they fit the purpose of each research

context depending on the intended multidimensions. Using the adjective "short-term" instead of "one-minute" emerged because it allows students to understand a writing moment as a short one without urging them to write their perceptions within a minute. Additionally, the participants also responded to a questionnaire on their perceptions of the AWE systems used and their communicative skills in English.

Even though students are supposed to write compositions as assignments for the course, I consider that having their perceptions on what writing means to them in specific moments of the intervention would be relevant as a source of data collection. The theory of meaning-making adopted herein considers that instruments and procedures of data collection can vary throughout the experience in the field. Thus, I planned to provide students with two prior moments of short-term paper writing, which were before the intervention and at the end of the experience with the AWE systems adopted, that is, Write & Improve and Grammarly.

Write & Improve by Cambridge was the first writing platform used during the teaching intervention. It is an online writing tool designed to help learners enhance their English writing skills. It is primarily aimed at students and language learners, as it provides instant, AI-driven feedback on grammar, vocabulary, and coherence. To date, it does not provide any generative feature, and it only offers ready-to-use writing activities. For this research, these activities were adapted to the contents covered by the course syllabus. Figure 6 showcases the interface of Write & Improve:

Figure 6 - The Write & Improve Interface
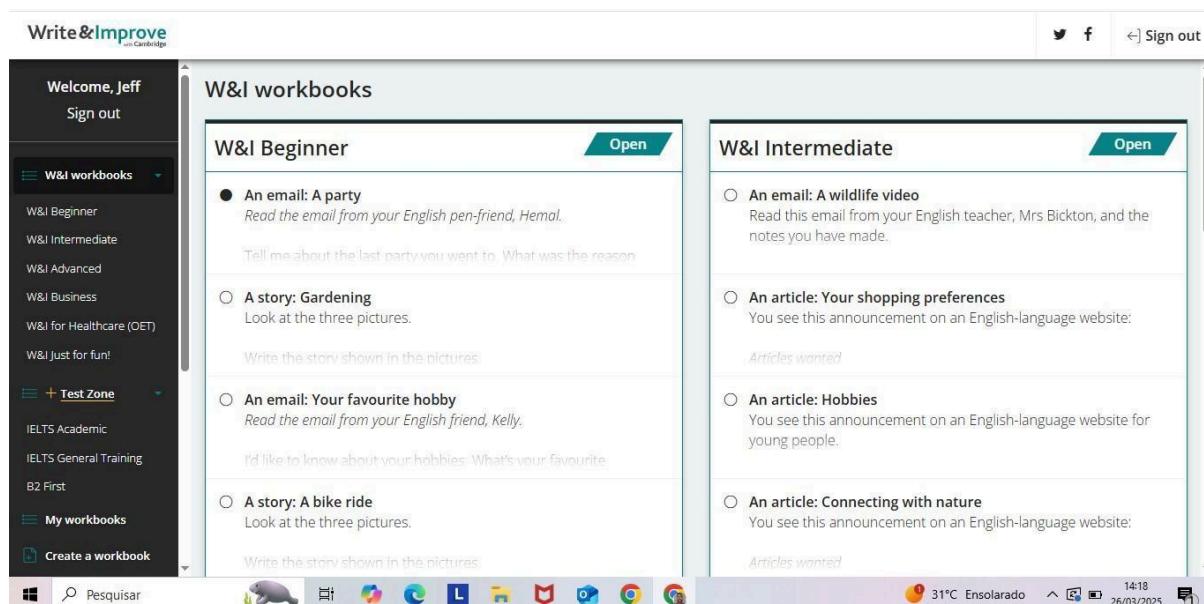
Source: Screenshot by the author

The platform features a crisp and intuitive interface, allowing users to submit written responses to various prompts across different proficiency levels. It provides instant feedback with suggestions for improvement, helping users refine their writing through practice. Key features include automatic error detection, writing tasks aligned with the Common European Framework of Reference for Languages (CEFR) levels, and personalized progress tracking. The tool is free to use, with a premium version offering more detailed feedback and additional exercises. Overall, Write & Improve is a valuable resource for English learners seeking to develop their writing skills in an interactive and structured manner.

Grammarly was the second writing platform used during the teaching intervention. It is a powerful writing assistant designed to enhance grammar, spelling, and style across various digital platforms. It serves as an AI-driven tool that helps users improve their writing by offering real-time suggestions for grammar corrections, clarity, engagement, and tone adjustments. Recently, a generative feature has been added to the platform, allowing users to craft prompts and have output generated by the system. Figure 7 provides an outline of the platform interface:

Figure 7 - The Grammarly Interface
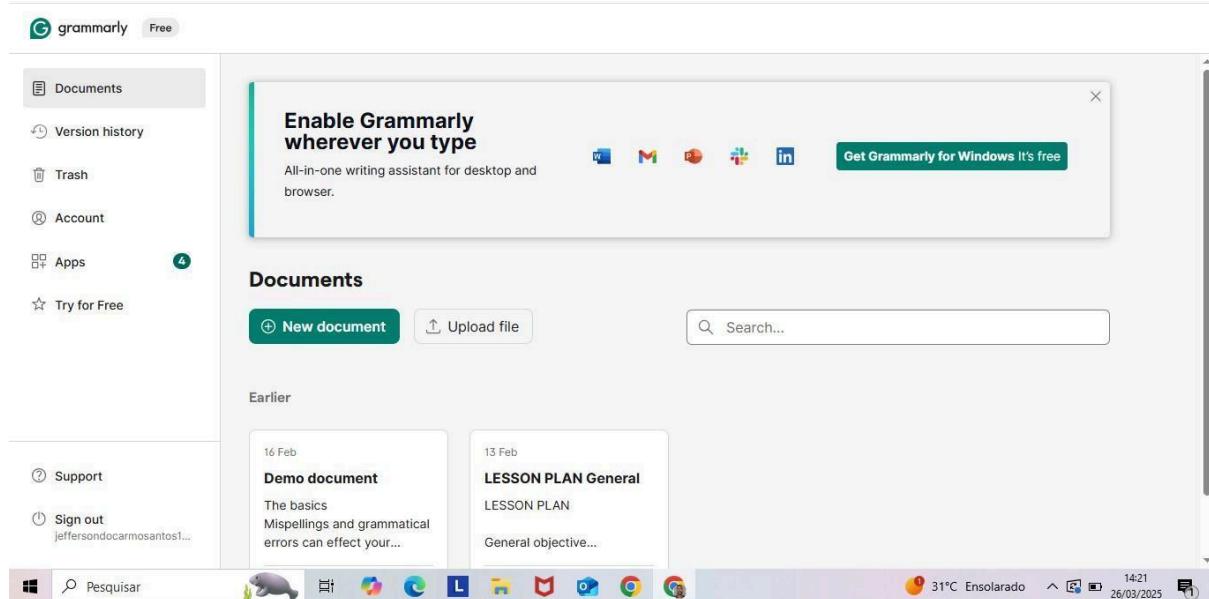
Source: Screenshot by the author

The platform features a sleek, user-friendly interface available as a web-based editor, desktop application, and browser extension. It also integrates seamlessly with popular applications such as Microsoft Word, Google Docs, and email platforms. Grammarly's key features include advanced grammar and spell-checking, plagiarism detection, and

AI-powered writing enhancements. Its premium version unlocks more in-depth suggestions, such as sentence rewrites, vocabulary improvement, and tone adjustments tailored to different audiences. Overall, Grammarly is an excellent tool for students, professionals, and anyone looking to refine their writing with ease and efficiency.

It is essential to mention that the instrument field diary was constantly used in all steps of the empirical research. I took a multimodal perspective toward the field diary as a whole. I used notebooks, post-its, a tablet, and a cell phone to record and save significant information. A field diary was central to performing a descriptive report of the field research. That means I take a clear stand as the writer of this dissertation as I position myself in the first person as much as possible. Eventually, diverse types of texts and background references crossed my way while researching, reporting, and discussing data.

3.3 The method of data analysis

First, this dissertation is planned to have a section of analysis that constantly converses with the literature review. As the theory of meaning-making is central to how knowledge is constructed herein, I emphasize that the meanings I make about data are cyclically rethought as I first interact with data and go back and forth in the analytical phases. That means I am a reader embedded in specific theories within a research context, but I constantly try to uncover those meanings. I do not endeavor to take a neutral stance. At the same time, I force myself to be open to understanding how to be aware of my subjectivity as a researcher.

The data were analyzed using the Teacher-Research framework (Freeman, 1998). This method emerges from the experience with data, which means that how results are revealed might impact how the procedures are displayed in this dissertation. It consists of four steps through which data is organized and analyzed: naming, grouping, finding relationships, and displaying. That means that the analysis is constantly being constructed while the researcher is dealing with data, which allows the constant switch in the analysis, as we can see in Figure 8:

Figure 8 - The Teacher-Research Framework
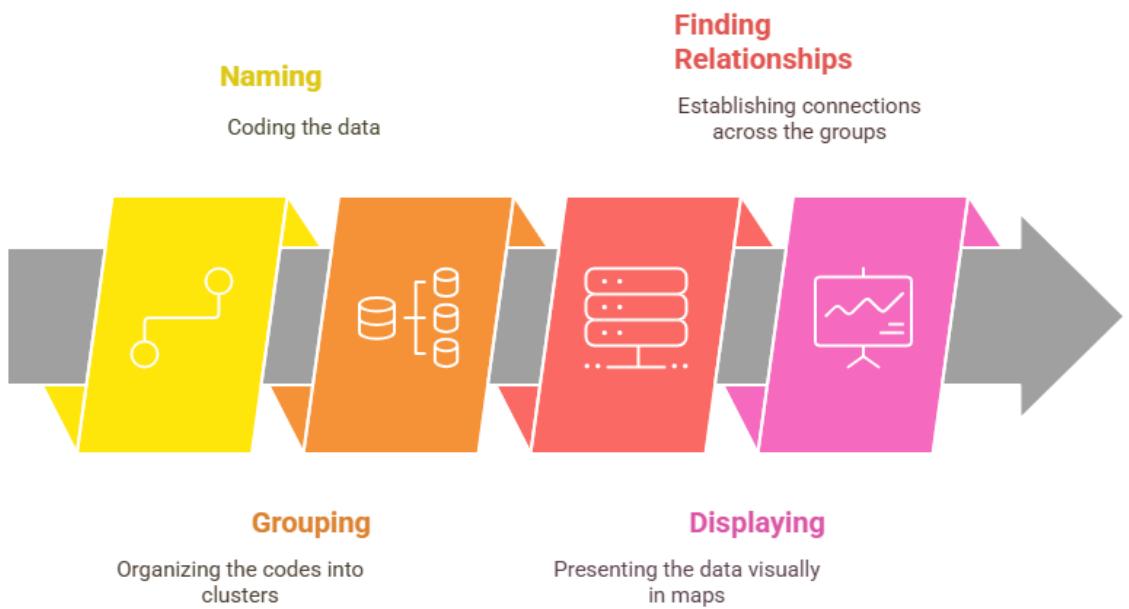
Naming consists of using codes, which can be nouns and verbs, to find relevant or recurrent patterns in the data. Codes can be selected a priori based on the reference theory or they can be grounded in the data. In this research, codes were chosen a priori, that is, they are concerned with the reference theory of meaning-making. *Grouping* encompasses organizing codes into a priori or grounded categories. For this investigation, groups were also decided a priori based on the reference theory. Likewise, codes were grouped into five categories of meaning-making functions: Reference, Agency, Structure, Interest, and Context. Sometimes, relevant codes do not fit the a priori categories, which we report as outliers, but they can allow for the creation of emerging categories.

Finding relationships represents the checking of similarities and differences between the categories. Freeman (1998) uses the metaphor of scaffolding for this step, where the researcher constantly rearranges the codes and groups according to the theory and the research objectives. Outliers start to reveal relevant elements that can answer the main inquiry. Correspondingly, the outliers may change the analysis or signal to new paths in answering or affirming the thesis statement. *Displaying* consists of having a bird's eye view of the analysis through maps. These maps help the researcher summarize the data as well as deepen the analysis. The structure of maps changes according to the research aims and

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[7] NapkinAI. Create a map summarizing the steps of a method of analysis. The process includes four phases: naming, grouping, finding relationships, and displaying the results. Please, include an icon representing each step. NapkinAI 2025 version on June 10th 2025. Artificial Intelligence. Accessed on: June 10th 2025.

instruments, but in this dissertation they are used as elements to summarize and reveal the most relevant aspects of the analysis.

As for the data collected from the empirical research, the first two phases help organize all the information through codes. *Naming* and *Grouping* encompass returning to data to capture flagrant codes or patterns, which herein is based on a priori five groups: reference, agency, structure, context, and interest. After the first and the second phases are performed, the analysis goes to its contrasting phase, where the categories are compared and contrasted while the researcher finds relationships between such groups. Finally, characterized by going back and forth in the previous phases while reporting data based on the reference theory, that is, meaning-making.

It is fundamental to mention that the analysis can be cyclical and not step-straight, as the researcher can constantly go back and forth between codes and groups while developing the analysis. Since the first two phases, the researcher should consider the theories while dealing with the data, which is the reason why the groups were based on the reference theory of meaning-making. When data and theory are intertwined in the first steps, the text tends to be more fluid and the whole analysis seems to make more sense.

In order to establish the practice of empirical research ethically, I submitted a preliminary version of the dissertation project to the UFS Institutional Review Board, which was eventually approved, allowing me to move forward with the field research [Process number: 5.745.006]. The committee required documents regarding the institutional allowance to carry out research on the campus as well as a document concerning the participants' commitment to the intervention. Considering all the core elements mentioned, the methodology of this dissertation can be summarized in Figure 9:

Figure 9 - Research Outline

THESIS STATEMENT

Artificial intelligence, especially through the use of AWE systems, unveils and unbalances education in topics such as evaluation, which has been historically used as punishment instead of a compelling learning phenomenon

AIM

Analyze the meanings undergraduate students make about using AWE systems and writing academically in English to understand their agency in such processes

1 How do the participants deal with their English learning process?

2 What do the participants say about writing in English?

3 What do the participants say about using AWE systems?

ANALYSIS

Coding and grouping the data ↔ Finding relations across the groups ↔ Discussing the data based on the theory of meaning-making and AWE systems ↔ Displaying the results in maps

Naming — Coding the data

Finding Relationships — Establishing connections across the groups

Grouping — Organizing the codes into clusters

Displaying — Presenting the data visually in maps

Structure — Design, display, and representation

Agency — Decision-making, action, and social practice

Interest — Social intentions and purposes

Reference — Background and elements related the the core of meanings

Context — Meanings located socially, historically, and ideologically

Source: Designed by the author

It is essential to highlight that having accomplished the aforementioned research elements [Figure 9] was the result of diverse academic dialogues with peers from Federal University of Sergipe and other institutions such as Virginia Commonwealth University and City University of Macau. This constant experience of interaction with peers helped me guarantee the academic certification that I was doing research in an ethical and consistent way. Below, I introduce a table with the main contributions that guided me into deciding the most appropriate venues in this dissertation.

Table 1 - Academic Credibility

Event	Summary of the activities	Location and Time
Advising sessions with Dr. Paulo Boa Sorte	Meetings with the advisor to decide on the central elements of the research, such as the objectives, the thesis statement and the overall methodology. It was also the opportunity to clear doubts and discuss feedback on the sections of the dissertation.	Individual meetings often online
Presentations of the research project, the ongoing research activities and preliminary versions before the Qualification and the Defense board	Research group meetings where each participant presents their ongoing activities regarding their thesis and dissertations. After presenting, the peers make comments and suggestions.	Virtually and in-person from 2021 to 2025
Supervising sessions with Dr. Monty Jones and Dr. Luciana de Oliveira	Meetings with the supervisors where I described and discussed the research outline. As this dissertation is written in English, it was relevant to assure the specific writing collocations of research reports. In addition, Dr. Monty Jones works with technology in Education and Dr. Luciana de Oliveira works with writing, which helped me directly.	In-person and virtual meetings where I presented the outline of my research project
Pre-qualifying board and Qualifying board	These events were carried out virtually, and they assisted in setting the research objectives, the literature, the data collection and the data analysis perspectives.	Both took place virtually in 2022 and 2024 respectively
2024 VCU School of Education Annual Research Colloquium	The poster/extended abstract entitled "*The Pedagogical Potential of Automated Writing Evaluation Systems*" was presented at the 2024 VCU School of Education Annual Research Colloquium. It was relevant crafting such a presentation as it helped to gather the current literature on writing and AWE systems, which is central in the literature review section of this dissertation.	In-person event March, 2024

2024 VCU Joint Research Symposium	The abstract entitled *"Generative Artificial Intelligence and ESL Education: The Emergence of Exercising Prompt Creation in Lesson Planning"* was presented and discussed virtually in the event. It was a relevant opportunity to deepen the analysis of how generative artificial intelligence may impact the outcomes of writing, especially in the context of ESL lesson planning, which was part of the intervention.	Virtually November, 2024
Defense Board		In-person July, 23rd 2025

Source: Elaborated by the author

The activities showcased in Table 1 represent the evolving and progressing nature of research practice. When we present in events, discuss theories in meetings and engage in dialogue with diverse peers, we establish academic credibility. This movement helps to guarantee that the research endeavors are ethically and consistently driven, as they are constantly challenged in terms of theory and methodology through questions and the assessment of new lenses.

4 THE ARENA'S PERFORMANCE STAGE: THE DATA ANALYSIS

> *"This focus on meaningfulness is therefore not primarily on the technicalities of 'meaning'. It is not on meaning as it sits locked up in dictionaries. It is not just on meaning as a relation between a sign and a reference. But neither is it on meaning as a grand question — on the meaning of life as a philosophical issue. Practice is about meaning as an experience of everyday life" (Wenger, 2006, p. 51-52).*

As indicated in the epigraph, meaning-making is flagrantly concerned with the idea of everyday life, but not only that as it is always embedded in communities of practice. The same is attached to the practice of writing, regardless of being for personal, professional or academic purposes, as it is intrinsically a result of the balance of cultural, political, ideological, historical, and geographical realms. In this sense, Figure 10 brings the analogy of a performance stage where the practice of writing, especially performed through the integration of AWE systems, is portrayed as an arena of meaning-making:

Figure 10 - The Performance Stage of Meaning-Making
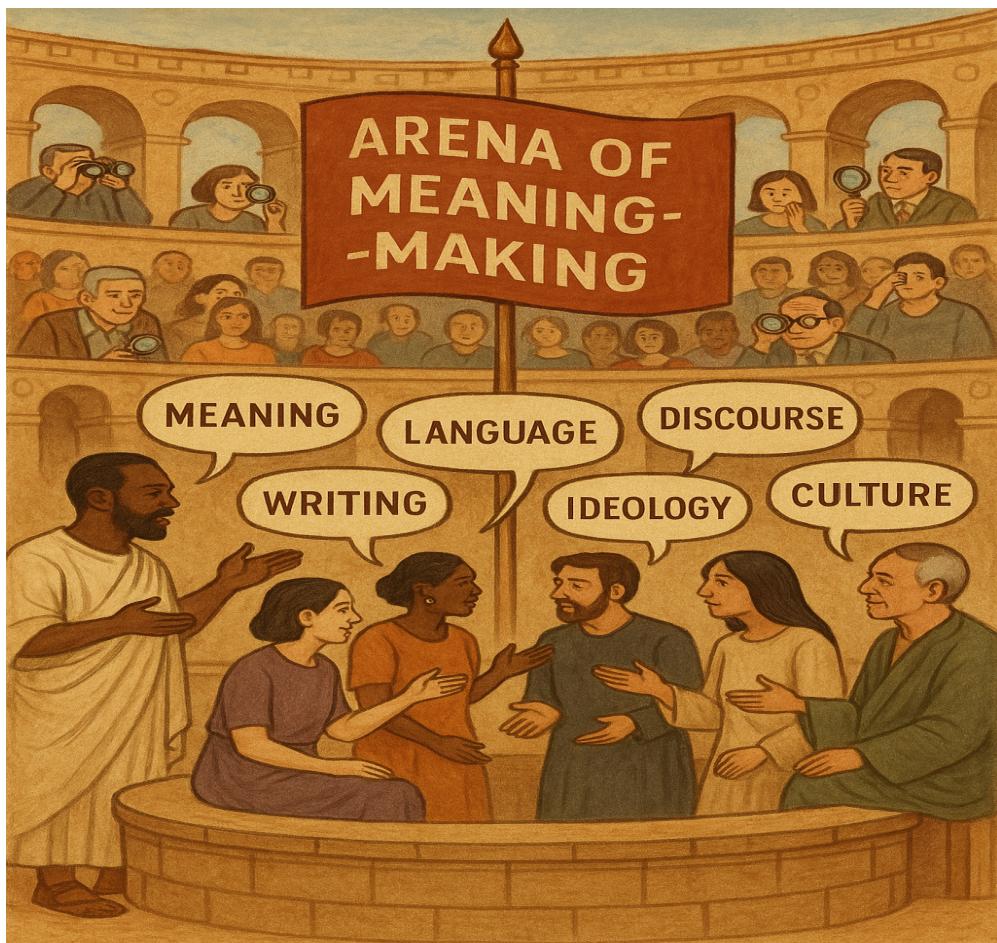
Source: Created through artificial intelligence[8]

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[8] OpenAI. Create an image of an ancient Roman-like stadium emphasizing the performance stage, where diverse people [including black people, women, diverse ethnic backgrounds] are interacting and talking with discourse

In this section, the data collected during the teaching intervention is described, analyzed and displayed. This means that the course syllabus, the assignments, the answers to a questionnaire, and the narratives of the participants through short-term papers were gathered to showcase how writing was approached during the field research, especially concerning artificial intelligence [Figure 10]. Even though there was an internet connection in some areas of the campus, we did not have it available at the building where the classes took place. It was agreed that the writing activities would be performed on paper and other tasks would be assigned as homework to allow the use of AWE systems as well as large language models.

According to these points, this section was also projected to answer the general research aim, which was to analyze the meanings undergraduate students make about using AWE systems and writing academically in English to understand their agency in such processes. In order to do that, this section recalled the research questions set while planning the teaching intervention: How do the participants deal with their English learning process? What do the participants say about writing in English? What do the participants say about using AWE systems?

4.1 The Teaching Intervention

The Federal University of Sergipe is equipped with a public wi-fi system called *Eduroam*. However, it does not work properly in every spot of the campus, which represents a limitation in this study. This means that professors and students are not always able to use the internet in the classroom, unless they use their own data package and students use theirs. Before describing the intervention, it is relevant to mention how the public university system works in Brazil, as the perspective of what is public changes depending on the country. A public institution is literally the opposite of a private one, which means that students are not required to pay any fee and charge to study. Therefore, the institution is maintained by the investment of the federal government through the use of public taxes.

The field research happened through a teaching intervention in the course English Language V, which is offered to undergraduate students in the fifth semester of the English teaching major. This course was chosen because it focuses briefly on writing skills as a

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clouds over their heads with words such as meaning, language, writing, discourse, ideology, culture. There are also people in the grandstands in the background looking at the performance stage wearing binoculars and magnifying glasses. There is also a windy flag in the middle of the performance stage with the expression "Arena of Meaning-Making". GPT-3.5 version on June 15th 2025. Artificial Intelligence. Accessed on: June 15th 2025.

preparatory step for a writing course offered in the sixth semester. Thus, as it was time to collect data, this language course was aligned with the research objectives set for this dissertation, as attested by its description: "The sequence of studies concerning the English language as acts of language by focusing on cultural issues and morphosyntax at the intermediate level. The development of the four language skills with emphasis on writing comprehension and writing expression" (Course Syllabus in Appendix).

Considering the curricular requirements of the course, the idea was to intervene through the addition of activities with AWE systems and large language models, which would be primarily performed through handwriting. Therefore, the course planning involved identifying official requirements of the university but also the context of writing in the current literature and the reality of the students, aligning with a conscious idea of course crafting (Woodward, 2001). Ultimately, it was decisive to promote an atmosphere of interaction (Nunan, 1990; Griffiths; Keohane, 2000), reinforcing the relevance of collaborative work in the practice of writing.

It was agreed that the course would cover chapters from the book *Teaching to Transgress: Education as the Practice of Freedom* (hooks, 1994) in order to create moments for conversation practice, the review of grammar tenses and the work with paragraph writing. One of the main aspects of the course was to cover diverse modalities in the study of language points. Thus, powerpoint presentations, TikTok clips, images and typographic texts were used throughout the semester, aligning with the perspective of multimodality brought in the objectives for the course:

> This course is designed to develop English language communication skills in both oral and written aspects, drawing from the book *Teaching to Transgress: Education as the Practice of Freedom*, by the North-American author bell hooks. It also aims at reinforcing language studies related to written skills and morphosyntactic structures at an upper-intermediate level. Our instructional approach will center on enabling an in-depth study of the English language with a focus on grammatical structures of tense and aspect systems. The course activities will be designed to practice the comprehension of multimodal texts on more complex everyday topics and engage in conversations about them. It will also expand the use of communication skills, prioritizing written comprehension and expression through the construction of paragraphs, topic sentences, punctuation, and peer review (Course Syllabus in Appendix).

As the course officially involved students at the intermediate level, it was possible to explore deeply the use of pictures, audio files and the drawing of maps to practice the development of listening, speaking, reading and writing. Another relevant aspect to ponder was that the language skills were explored across the chapters, which made it possible to

build a coherent course where everything was connected. The multimodal approach implemented was also explored through the use of platforms for writing feedback. The participants were asked to experience two AWE systems and comment on them, especially on how the design impacted their experience and what they considered as to the feedback provided.

In light of this, the teaching intervention occurred through the use of AWE systems during the practice of writing. As the internet connection was not provided in the classroom, the participants were assigned to use the platforms Write & Improve and Grammarly as homework, which was a limitation in the study. However, the platform design and tools were discussed in class through powerpoint presentations. Conversely, the students practiced writing on paper, and they were assigned homework where they were asked to copy and paste the paragraphs written in class to receive feedback from the platforms. They were also asked to comment on the feedback by responding to some questions about platform usability and feedback.

In addition to the AWE systems, the students also worked on the crafting of lesson plans through the use of generative artificial intelligence tools such as ChatGPT and Gemini, even though the focus is on AWE systems. The main purpose of the activity was to have participants create and adapt prompts based on a critical perspective of language teaching. In face of that, participants presented the process of creating the prompts, feeding them into the platform and analyzing the results. Moreover, they were asked to respond to the experience with the generative artificial intelligence tool used in terms of expectation, usability and effectiveness.

Integrating artificial intelligence into writing challenges the dialogic nature of meaning-making (Bakhtin, 1981). This happens as artificial intelligence not only processes language, but also participates in its circulation, production, and evaluation, normally without transparency about the ideologies embedded in such processes (Araújo; Araújo, 2024). As AWE systems are trained on vast datasets reflecting historical and social biases, their outputs reinforce certain worldviews.

Writers interacting with these systems enter a new facet of dialogue, one that includes human and non-human interlocutors, both shaping meaning-making. In these arenas, meaning-making remains ideological and socially situated (Cope; Kalantzis, 2020), but the agents of that process are more complex and diffuse. To critically engage with writing and language in the age of artificial intelligence, it is relevant to perceive the conflicts and power relations underlying automated responses (Smith, 2023; Araújo; Araújo, 2024), recognizing

that every text, whether human or machine-generated, is part of an ongoing ideological movement of meaning-making.

4.2 Describing the classes

Class 1 was designed to be introductory, where the conception of language guiding the study of grammar was discussed, the upcoming activities were highlighted, and the participation requirements were mentioned. It is relevant to mention how the activity of getting to know each other was meaningful, as the group had already studied together. The purpose was to have them sorted out and have others outline them to the class. Table 2 brings the gist of the first class:

Table 2 - Outline of Class 1

FIRST ACTIVITY

a) **Course Syllabus presentation**: Students will be informed that a file of the course syllabus was uploaded on the university's academic system. Then a Powerpoint presentation will be used to read along the syllabus and explain the requirements for the course. Showcase how grammar will be worked out based on the chapters of *Teaching to Transgress*, bringing examples of the chapter *Introduction*.

SECOND ACTIVITY

a) **How well do we know each other?**: the class will be organized in a stand-up circle where students have to introduce themselves in two minutes to the person beside them. The circle moves in every two rounds, as each person has introduced themselves to the person on the right and left sides. After that, each person will point to the person they are directly facing to outline that person's profile. This activity provides students with the idea of reading lenses, where each person selects what they consider relevant to summarize someone else.

THIRD ACTIVITY

a) **Getting to know AWE systems**: Students will be introduced to the platforms they will use in some writing activities during the semester, that is, Write & Improve and Grammarly. Students will be asked if they have already heard of such platforms and if they know the purpose of AWE systems. After that, they will be provided with a visual outline of the platforms, where they can check settings, affordances and design. There is one relevant aspect to mention: all the activities with the platforms will be assigned as homework in face of the internet issues on campus.

Source: Field research archive

The class began with an orientation to the course structure and expectations, which intended to promote the involvement of the students (Griffiths; Keohane, 2000). Students were informed that the syllabus had been uploaded to the academic system for their reference, and it was emphasized that suggestions for changing or adapting the flow of the

classes would be appreciated. To ensure clarity and engagement, a PowerPoint presentation was used to guide the participants through the syllabus. Each section of the document was read and explained, covering course objectives, assessment criteria, weekly topics, and general guidelines.

Eventually, this allowed students to ask questions and clarify doubts, ensuring a transparent understanding of the course requirements, also allowing a space for engagement and negotiation of meaning, as stated by Wenger (2006). Following that, students were introduced to an example of how grammar would be addressed during the semester. As the chapters were assigned to be read and discussed in class, the grammar points required for English Language V would also be covered. Figure 11 brings one of the examples used to introduce students to the grammar perspective adopted:

Figure 11 - Grammar Study in Language V

As seen in Figure 11, grammar was introduced by analyzing the verb tenses and aspects used in two excerpts of the chapter *Introduction*. In the first example, the verb phrase "my teachers were enacting" was highlighted to illustrate the past tense and progressive aspect, indicating an incomplete or ongoing action in the past. As an attempt to understand

possible meanings behind the use of the language, it was discussed that the tense and the aspect both emphasized the evolving nature of anticolonial pedagogy. This brings forth the perspective of meaning embedded in locality and identity (Wenger, 2006), and language as a result of community negotiation.

In the second example, the verb phrase "has always acknowledged" was used to demonstrate the present tense combined with the perfect aspect, which refers to a completed action with relevance to the present moment. This highlighted how Freire's acknowledgment is an ongoing truth rooted in past actions. Overall, the discussion connected form, tense and aspect, with the meaning and timing of actions performed in the excerpts. Exploring grammar structures inside context allows for questioning what and who is included or excluded in discourse (Janks, 2016), reinforcing that language is always socially embedded.

To foster a sense of community and initiate interaction, an icebreaker was conducted. The class formed a standing circle where the participants spent two minutes introducing themselves to the person next to them. The circle rotated after every two rounds, allowing each student to speak with those on both their left and right side. Following this, everyone faced the person directly in front of them and summarized that person's profile. This reflective part emphasized the concept of reading lenses (Janks, 2010; 2016), encouraging students to consider how personal perspectives shape the way we perceive and describe others. It also introduced the idea of interpretation, which is central in academic writing.

The final segment of the class introduced students to the AWE systems, that is, Write & Improve and Grammarly. A brief discussion was initiated by asking if the students were familiar with these tools and their primary functions. A visual walkthrough outline was performed, presenting the user interface, features, and settings of each platform. Students learned about the design of the systems and how they can assist in improving writing through feedback and revision suggestions. Due to internet limitations on campus, all work involving the AWE systems was completed at home. This ensured that students could fully explore and engage with the tools without technical disruptions.

Class 2 was designed as a three-part sequence aiming for theoretical cohesion based on a critical language perspective. Each activity was grounded in the understanding of language as a social, ideological, and transformative phenomenon. The class was designed to create a multimodal and reflective learning experience towards language education. It was based on the chapter *Language* from *Teaching to Transgress* (hooks, 1994), framing language as a cluster of identity, resistance, and cultural negotiation.

Table 3 - Outline of Class 2

FIRST ACTIVITY

    a) **Background knowledge**:

1. Have students read the chapter "Language" from the book "Teaching to Transgress" by bell hooks in groups to find and mention excerpts where they identify two examples of verb tense and aspect (20 minutes);

    b) **Summarizing the chapter**:

1. Have students map out expressions and words that stood out to them while reading the chapter (about 20 minutes);
2. Create a map of the chapter together on the board (about 15 minutes).
(The maps will be used to write the paragraph about the chapter)

SECOND ACTIVITY

    a) **Listening**: as the chapter talks about a social perspective towards language, where it is contextual and ideological, students will watch and listen to a video of bell hooks discussing what she calls "The New School" (about 25 minutes):

1. Pre-listening: ask students which perceptions of language are central in the chapter and list the ones that will likely emerge in the video.
2. Listening: ask students to take notes on what they find relevant (as the video is long, it will be displayed once and eventually repeated in some fragments)
3. Post-listening: based on what they listened to and what they read, which challenges do they see in performing language education in the way bell hooks addresses?

THIRD ACTIVITY

    a) **Planning and writing a paragraph**: writing about language education (about 30 minutes):

1. Encourage students to draft out a paragraph summarizing the discussion during the whole class, including the chapter, the maps they designed and the video on "The New School".

Source: Field research archive

The first activity engaged students in reading and meaning analysis. By identifying verb tense and aspect within the chapter, students were encouraged to perceive grammar in social context. Briefly, this approach reflects a functional view of language that prioritizes usage and meaning. In addition to grammar, students were encouraged to map out expressions and words that resonated with them personally or intellectually. This led into a collaborative mapping session on the board, which visually organized the central themes approached in the chapter. These maps served not only as comprehension tools but as ideological landscapes, as students identified how bell hooks discusses language to critique power relations.

In the second activity, students listened to bell hooks discussing what she called "The New School". The video reinforced the topics approached in the chapter by bringing hooks'

voice and presence into the classroom, making her ideas more immediate and embodied. Pre-listening questions encouraged students to recall and anticipate perceptions of language from the reading, establishing conceptual cohesion. While listening, students were advised to take notes on what they found relevant, reinforcing their agency and critical listening skills. The post-listening activity invited them to grapple with the challenges of implementing the language education hooks envisions, which is liberatory, inclusive, and focused on experience.

The third activity synthesized the learning experience through reflective writing, especially considering multimodal input (Boa Sorte, 2018). Students were asked to draft a paragraph summarizing their insights from the chapter, the concept maps, and the video. This writing task was an opportunity to articulate both their personal and theoretical stance on language education. It invited students to connect the ideological dimensions of language with pedagogical practice, reflecting the broader aim of critical pedagogy, that is, to transform both understanding and action (Smith, 2023). Through such a process, students moved from passive receivers of information to active participants in the process of meaning-making.

Overall, the class was connected and focused on a critical and emancipatory view of language. Each activity was built upon the previous one, creating a coherent learning experience that mirrors the central concerns of language education discussed. This aligns with the perspective defended by Boa Sorte (2018), where the practice of writing is performed as a multimodal activity that always reports on social issues. In this sense, the class moved from interpretation to production, allowing students to encounter language as both their field of study and a tool for self-expression and social change.

Class 3 was designed to deepen the understanding of verb tenses through the lens of critical pedagogy and to guide students into meaningful written expression. The class was divided into three main activities, each contributing to language development through analytical reading, listening comprehension, and collaborative writing, as seen in Table 4:

Table 4 - Outline of Class 3

FIRST ACTIVITY
a) **Background knowledge** (Introducing the study of verb tenses to deepen next class):
Have students read the chapter "Building a Teaching Community" from the book "Teaching to Transgress" by bell hooks in groups to find and mention excerpts where they identify verb tenses studied in previous language courses at UFS (20 minutes);

List examples of verb tenses and ask students to read along the excerpts containing such verb tenses to identify why those tenses were used (about 20 minutes).

 b) **Summarizing the chapter**:

 Have students map out expressions and words that stood out to them while reading the chapter (about 20 minutes);
Create a map of the chapter together on the board (about 15 minutes).
(The maps will be used to write the paragraph about the chapter)

SECOND ACTIVITY

Listening task: as the chapter talks about interactions where dissent is a decisive element, we will watch and listen to a TikTok clip of bell hooks about "The hunger for dissent" (about 25 minutes):

Pre-listening: ask students which social institutions they think influence the meaning we make in society and list the ones that will likely emerge in the clip.
Listening: ask students to take notes on what they find relevant (since the clip lasts about 3 minutes, it will be played three times as it is considered short).
Post-listening: based on what they listened to and what they read, how do they see possible ways of exploring dissent in language education?

THIRD ACTIVITY

 a) **Planning and writing a paragraph**: writing about the chapter (about 30 minutes):

Ask students to recall the elements of a paragraph and the process of writing, which were taught in the previous class (brainstorming, writing, peer-review and revision);
Encourage students to draft out a paragraph summarizing the chapter based on the maps they developed.

 b) **Peer-review**: ask students to share their paragraphs with a partner of their preference and list the elements they are supposed to assess in each others' writing. (about 20 minutes):

 Is the paragraph coherent as a whole?
Is there an evident topic sentence?
Do the supporting sentences help explain the topic sentence?
Is the concluding sentence helping the reader in terms of comprehension?
Is any editing regarding grammar needed?

Source: Field research archive

The class began with a reading-based task centered on the chapter *Building a Teaching Community*. In small groups, students read the chapter with the goal of identifying excerpts that demonstrated verb tenses previously studied in earlier language courses at the university. Lasting 20 minutes, the activity encouraged students to connect past grammar knowledge with authentic language usage in academic texts. Following this, students listed the verb tenses they found and revisited the excerpts to analyze the specific purposes behind their use [another 20 minutes]. This stage not only reinforced tense usage but also fostered critical engagement with the chapter.

The next part of the activity involved summarizing the chapter by mapping out expressions and words that stood out during the reading [approximately 20 minutes]. This encouraged students to engage in lexical awareness and interpretation. A collaborative session followed where a concept map of the chapter was created on the board [15 minutes]. This visual representation helped students organize their thoughts and prepared them for the writing component of the class.

The second activity introduced a multimodal learning experience. The class engaged in a listening activity based on a TikTok video clip of bell hooks discussing *The hunger for dissent*. This 25-minute activity was divided into three phases: pre-listening, listening, and post-listening. In the pre-listening stage, students were prompted to reflect on which social institutions influence meaning-making in society. The reflections were listed as a map on the board to prepare them for the content of the clip. During the listening phase, students were instructed to take notes on key ideas and insights, as the clip was played three times to ensure depth of comprehension. In the post-listening part, students were invited to reflect on the audio and the chapter to explore how dissent can be incorporated into language education. This fostered a broader critical perspective on language use and social responsibility.

The final activity was a structured writing task that consolidated the topics addressed during the class. Students were guided through the paragraph-writing process, starting with a brief recall of the essential components of paragraph structure and writing exercises such as brainstorming, drafting, peer-review, and revision [around 30 minutes]. Using the chapter maps created earlier, students drafted a paragraph summarizing the chapter. This task encouraged them to synthesize ideas while practicing coherent academic writing, reinforcing writing as a collaborative task (Nunan, 1999).

The last part of the class was centered on a peer-review activity [about 20 minutes], where students exchanged paragraphs and assessed each other's writing using a checklist of criteria [a rubric]: coherence, presence of a clear topic sentence, relevance of supporting sentences, effectiveness of the concluding sentence, and grammatical accuracy. This collaborative editing session enhanced students' critical reading and feedback skills while fostering a sense of ownership and mutual learning in the classroom (Hedge, 2002). Overall, the class integrated grammar review, critical reading, listening comprehension, and academic writing in a cohesive, reflective, and student-centered manner.

Class 4 was structured around critical reading, collaborative analysis, reflective listening, and grammar instruction, all interwoven with the theme of social consciousness and language learning. The class was divided into three major segments: a pair activity based on

the chapter *Engaged Pedagogy*, a listening comprehension section dealing with issues of race and identity, and a grammar-focused session on verb tenses using a PowerPoint presentation.

Table 5 - Outline of Class 4

FIRST ACTIVITY

Pair activity: Take a look at the chapter "Engaged Pedagogy" from the book "Teaching to Transgress" by bell hooks, discuss the striking elements and come up with a definition for the verb transgress. After that, select some events or situations described by the author that you consider to be examples of transgressing.
Sharing the definitions in the classroom and discussing the examples mentioned.

SECOND ACTIVITY

Listening (White Supremacy isn't a thing / White Supremacy and Black Self hate)

Pre-listening: when the author talks about black students attending white schools and colleges, which challenges did they face? How were they treated when they refused to accept being overlooked?
Listening: listening for the gist and for specific information;
Post-listening: selecting quotes of what bell hooks mentioned in the clips and trying to connect with some ideas from the chapter.

THIRD ACTIVITY

Powerpoint presentation: Explain verb tenses from slide 1 to 26 (the concept of verb tense, recalling verb tenses and focusing on simple present). Examples from the chapter "Engaged Pedagogy" are presented, and the students select their own fragments from the text to exemplify the verb tenses.

Source: Field research archive

The class began with a pair activity that encouraged students to explore the chapter *Engaged Pedagogy*. Working in pairs, students were prompted to identify and discuss striking elements of the text. The task fostered critical thinking and dialogue, as students engaged with hooks' ideas on education as a practice of freedom. A key component of the activity was to collaboratively create a definition for the verb "transgress" grounded in the context of the chapter.

Following this, students were asked to pinpoint specific events or situations described by hooks that exemplify acts of transgression, particularly those that challenge traditional or oppressive educational paradigms. The examples were then shared with the whole class, encouraging a collective discussion where students compared definitions and interpretations, fostering deeper understanding through peer agency.

The second part of the class focused on two TikTok clips, that is, *White Supremacy Isn't a Thing* and *White Supremacy and Black Self-Hate*, engaging students with racial

injustice and resistance. In the pre-listening stage, students reflected on the experiences of black students in predominantly white academic institutions, especially considering the social and psychological challenges they faced and their responses to marginalization. This primed students to grasp the content of the recordings. During the listening stage, they practiced listening for both the gist and specific details, enhancing their comprehension skills. In the post-listening phase, students selected impactful quotes from the clips and were encouraged to draw connections between the audio content and the ideas explored in the chapter, reinforcing content coherence and promoting critical analysis.

The final session of the class transitioned into a more grammar-focused approach, as a PowerPoint presentation covering verb tenses was displayed. Spanning slides 1 to 26, this segment began with an explanation of the general concept of verb tenses, followed by a review of tenses in the English language grammar. Occasionally, special attention was given to the simple present tense. This section included examples, guided explanations, and opportunities for grammar practice, aiming to solidify grammatical understanding that supports broader communication goals (Nunan, 1990).

Together, these three segments provided a varied learning experience, combining critical pedagogy with language development in a way that reflects the values bell hooks advocates for, such as an engaged, transformative, and socially aware education. It is also relevant to mention the engagement showcased by the students when grammar points were explained and discussed, which was even more salient when those points were discussed structurally. In sum, the activities envisioned to address language as an intersection of race, culture and meaning (Smith, 2023).

Class 5 began with a pair activity focused on chapter 3, entitled *Embracing Change*. Students were tasked with discussing the striking elements of the chapter, encouraging active reading and critical engagement. Each pair selected two examples from the text to illustrate how change can be represented. This activity was designed to provoke conversation around personal, cultural, or pedagogical transformation. After the discussion, the pairs shared their definitions and examples with the class, fostering a communal learning environment where different interpretations and insights could be heard and explored.

Table 6 - Outline of Class 5

FIRST ACTIVITY
Pair activity: Take a look at chapter 3 "Embracing Change" from the book "Teaching to Transgress" by bell hooks and discuss the striking elements with your peers and select two examples of how change is exemplified in the chapter.

Sharing the definitions in the classroom and discussing the examples mentioned.

SECOND ACTIVITY

Listening [TikTok clip: Dominating Culture and Judgement]

Pre-listening: do you normally look for social approval in any aspects of your life? Can you point out examples?
Listening: listening for the gist and for specific information;
Post-listening: as we read about change in the chapter, what hooks are mentioned in the clip that could express examples of change?

THIRD ACTIVITY

Grammar Practice: Explain verb tenses from slide 7 to 31 (focus on simple present and simple past).
Skim the chapter to find one example of simple present and simple past, and explain why they identified such excerpts as examples.
Activity: slide 57 (come up with your own life timeline and share with classmates).

Source: Field research archive

The listening section of the class was divided into three stages. In the pre-listening, students reflected on their lives by considering the role of social approval and how it influences their behavior. They were asked to provide examples, which primed them to listen with a personal lens. While listening to a clip, which was related to bell hooks and the theme of change, students captured both the gist and specific details. This dual focus sharpened comprehension skills and helped them stay attuned to central ideas and nuanced points. In the post-listening, students linked the clip back to the reading, identifying the ideas mentioned in the clip that could reflect or support the theme of change explored in the chapter. This synthesis promoted deeper analysis and interdisciplinary understanding.

In the grammar section, the focus was on mastering the simple present and simple past tenses. Using slides, verb tense rules and pragmatic uses were explained in detail. Students then skimmed the chapter to find one example each of the two tenses, which helped ground grammatical knowledge in authentic contexts. They also explained why the excerpts qualified as examples of the respective tenses, reinforcing grammar recognition and contextual understanding.

To consolidate the grammar lesson, students engaged in a creative application: using a prompt provided on a PowerPoint presentation, they created and shared their own life timelines. This activity fostered the idea of culturally sustaining pedagogy (de Oliveira; Jones, 2023), as the students had contact with the dominant language of prescriptive grammar but also had the opportunity of using their own language to design their life timelines.

Consequently, the activity provided room for applying verb tenses meaningfully while encouraging students to reflect on personal growth and transformation, which underlies the theme of change.

Overall, the class was designed to engage learners on intellectual, emotional, and personal levels, using a combination of peer interaction, critical thinking, and creative expression. The progression from authentic text to listening and grammar allowed students to examine the concept of change from multiple perspectives, making the theme relevant and resonant.

Class 6 focused on the integration of grammar, listening comprehension, and critical discussion, drawing connections between language structures and pedagogical themes. Each section of the class was designed to engage students cognitively and reflectively, encouraging them to apply grammar in meaningful contexts and explore social issues through language, and how these issues influence the practice of writing.

Table 7 - Outline of Class 6

FIRST ACTIVITY
Grammar Practice: Explain verb tenses from slide 27 to 59 (covering all verb tenses). Activity: slide 57 (come up with your own life timeline and share with classmates).
SECOND ACTIVITY
Listening [TikTok clip: Heroes, War and Death]
Pre-listening: do you think we deal well with the idea of dying? Listening: listening for the gist and for specific information; Post-listening: which verb tenses might be connected with references of dying? Why do we normally think of death as the ending point in someone's life timeline?
THIRD ACTIVITY
Pair activity: Take a look at chapter 4 "Paulo Freire" from the book Teaching to Transgress by bell hooks and discuss the striking elements with your peers and select... Skim the chapter to find examples of the verb tenses studied at the beginning of the class, and explain why they identified such excerpts as examples.

Source: Field research archive

The class began with a review of English verb tenses through a PowerPoint presentation bringing excerpts from chapter 4, entitled *Paulo Freire*. Each tense was explained in detail, including form, use, time references, and common mistakes made by native and non-native users of English. Students revisited the simple tenses [present, past, future], as well as progressive forms, perfect tenses, and perfect progressive combinations.

The lesson ensured clarity on how these tenses function in different contexts and how they convey time, duration, completion, and continuity.

Following the theoretical explanation, students engaged with a prompt, which introduced a practical and reflective activity: creating their own life timelines. Students were encouraged to map out key moments in their lives using a variety of verb tenses, such as the present perfect for achievements, the past simple for defining events, and the future simple or future perfect for aspirations. This activity not only consolidated grammatical knowledge but also fostered personal sharing and peer interaction as students presented their timelines to the class.

The listening activity was based on a TikTok clip called *Heroes, War and Death* from an interview where bell hooks talked about these topics. The listening segment centered around the theme of death, framed through the lens of heroism and conflict. The pre-listening phase addressed the following question: "Do you think we deal well with the idea of dying?". The question encouraged students to reflect on cultural and personal attitudes toward mortality, setting a reflective tone for the audio. This stage primed students for the topic, activating prior knowledge and engaging their emotions.

During the listening phase, students were tasked with identifying both the general ideas and specific details from the audio. This helped to develop comprehensive listening skills, balancing macro and micro comprehension strategies. The content involved stories or reflections on war, heroism, and death discussed by hooks, offering rich material for interpretation.

In the post-listening discussion, students pondered which verb tenses appeared most often in the discussions about death. The past simple was prevalent for recounting events, while the present perfect surfaced in reflective or summarizing contexts. The class explored why death is typically seen as the endpoint on a life timeline, linking the theme back to the earlier grammar activity and engaging with cultural perspectives.

In the final activity, students worked in pairs to explore the chapter. First, they discussed striking elements of the chapter such as quotes and themes that resonated with them, potentializing critical thinking and the understanding of Freirean pedagogical philosophy. This also provided room for students to contribute with the flow of the class, as some topics from the chapter were highlighted and eventually caused the whole group to focus on them.

Next, students skimmed the chapter to identify examples of verb tenses covered earlier in class. This required both overview and analytical reading, as they not only located

verb forms but also explained their function in the chapter. For instance, they found the present simple used for general truths or theories, and the past perfect in biographical references. Consequently, the activity reinforced grammar comprehension by placing it within an authentic text, bridging the gap between language accuracy and meaningful communication.

While planning these classes, language was conceived as a vehicle of expression, since it is an active site of ideologies, where meanings are made, negotiated, and contested within social contexts. Arenas such as politics, education, the media, and everyday discourse function as spaces of conflict, where different groups perform interpretations of truth, identity, and reality (Bakhtin, 1981).

These conflicts reflect the dynamic and dialogic nature of meaning-making, which is always embedded in social relations and power structures (Menezes de Souza, 1995). Rather than being fixed, meanings are shaped through dialogue, and the interaction of diverse voices, each situated within a particular ideological position. As the perspective of dialogism suggests (Bakhtin, 1981), every utterance carries the weight of previous meanings and anticipates future responses, making language a terrain of social negotiation.

Writing, as one of the most powerful tools of language, became a concentrated space for this ideological struggle. It is through writing that individuals articulate, reinforce, and contest meanings, whether in the classroom, media, texts, or digital communication (Cope; Kalantzis, 2020). AWE systems and large language models now intervene in these processes, influencing how writing is performed and evaluated.

While these tools promise efficiency and accessibility, they also embody and reproduce norms and conceptions of language, coherence, correctness, and purpose (Cope; Kalantzis; Zapata, 2025). In doing so, they participate in the ideological shaping of what counts as adequate writing, often privileging dominant discourses and potentially marginalizing alternative voices (Smith, 2023). This raises important questions about whose language is being legitimated, whose perspectives are being silenced, and how the power dynamics of meaning-making are shifting in a technologically mediated world (Menezes de Souza, 1995).

4.3 Engaging with AWE systems in practice

The assignments focused on writing were primarily performed through the use of AWE systems. Such systems have been developed for helping students and scholars in reviewing texts, especially in English, and they are highly accepted in academic settings

(Wilson et al., 2021). AWE systems are based on natural language processing and machine learning, and they perform through the scan of written texts to provide users with feedback. The feedback normally addresses writing aspects such as verb tense, syntax, register, cohesion, and coherence. AWE systems, e.g., Grammarly, review texts through predefined criteria indicated by the user to identify errors or mistakes and offer suggestions for improvement.

The use of AWE systems varies from educational and professional usage to personal one, as systems like Grammarly also work on smartphones. These systems aid users in refining their writing skills as they provide immediate feedback focused on the selected criteria. This feature is relevant and decisive because it reinforces the usefulness of the platforms as efficient and contextual tools (Link; Mehzard; Rahimi, 2020) . They also allow for interactive activities where students and teachers can act as peer-reviewers and potentialize the efficacy of the systems (AI-Inbari; AI-Wasy, 2022). On the other hand, most systems require an active stance from the users as most of them do not generate texts, which makes them potent in the implementation of agentive writing development and refinement.

AWE systems demonstrate significant potential in enhancing writing proficiency by providing detailed feedback based on a range of linguistic features (Hockly, 2018). These systems operate through the analysis of a large corpora of texts and focus on critical language elements such as word choice, composition length, target audience, and syntactic structures (Meyer et al., 2023). By identifying patterns and linguistic norms within these corpora, AWE systems offer writers insights into how their texts align with expected standards, helping them refine their writing to better meet academic, professional, or evaluative criteria (Graham et al., 2023). The ability to target audience-appropriate language and maintain effective syntax structure makes AWE systems especially useful for those developing nuanced and purposeful writing.

Trained through data-driven algorithms, AWE systems are capable of processing and evaluating texts with a level of precision that mirrors expert human scoring (Ramesh; Sanampudi, 2022). These algorithms are designed to recognize semantic coherence and structural organization, allowing them to predict human scoring with a high degree of reliability. Such a capability is relevant for writers preparing for proficiency exams or competitive selection processes, for instance, where aligning with scoring criteria can determine success (Meyer et al., 2023). As such, the predictive accuracy of AWE feedback not only boosts a writer's confidence but also increases their chances of achieving desired outcomes in high-stakes evaluations.

Examples of AWE systems include Grammarly, which focuses on grammar, tone, and style, Turnitin Revision Assistant, which offers suggestions on structure and coherence through automatic scoring, and Write & Improve which provides ready-to-use writing tasks. Criterion, developed by ETS, has been widely used in academic settings to assess essays based on rubrics (Zhang; Xu, 2022). Some limitations in AWE systems include the non-identification of nuances and the lack of understanding concerning creative writing, which highlights the need for users to be effectively involved in the writing process and be aware of writing conventions (Wanga et. al., 2020). Alternatively, these systems congregate human expertise, especially when integrated with teacher feedback, and machine efficiency, as they assist users to achieve advanced levels of proficiency and confidence in writing.

Correspondingly, the first work with automated feedback in the semester happened through the use of the platform Write & Improve by Cambridge. Even though the students were encouraged to check the platform on their phones, the purpose was to project screenshots of it and briefly explain how it works. A powerpoint presentation was designed and used to showcase and comment on the platform features. Figure 12 was presented to the students during class, and it brings the first screenshot where the initial features are shown:

Figure 12 - Example Feedback Provided by Write & Improve
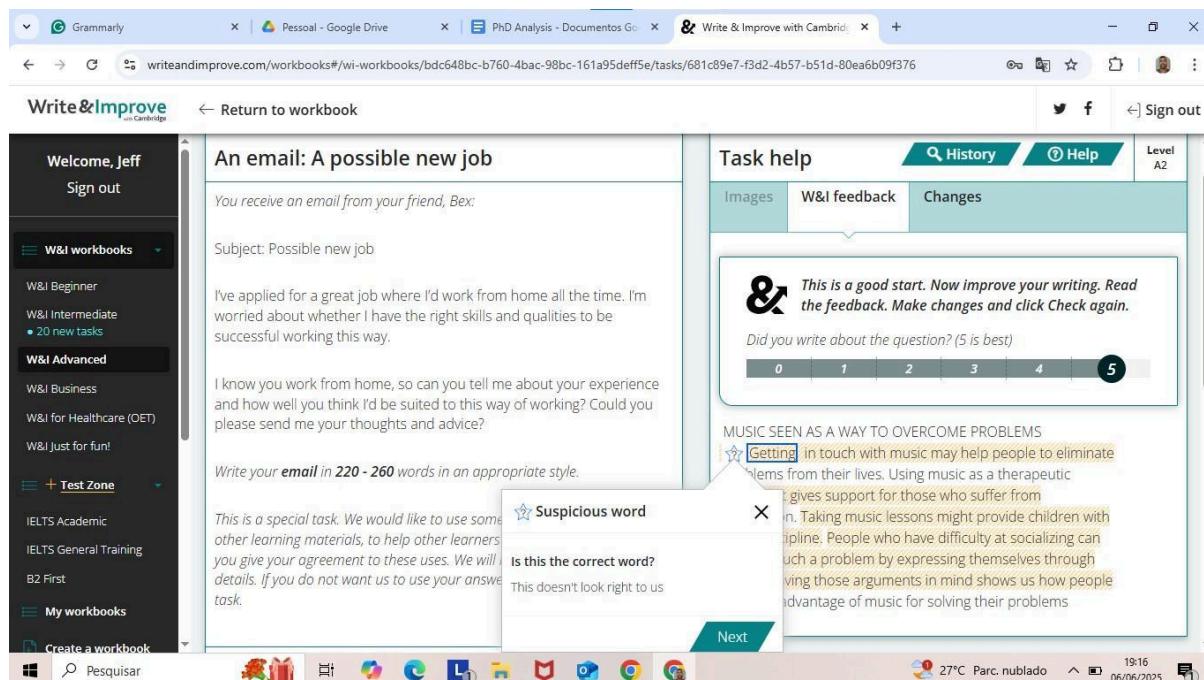
Figure 12 allows for an outline of the platform in terms of feedback, as it illustrates the types of activities, the levels of difficulty, and the purpose of each icon. It was also useful

for bringing forth a discussion on platformization, which included design, data creation and flow, and the overall functioning of a platform. The purpose of Write & Improve is to provide users with activities based on the demands of the Cambridge exams. In face of that, the activities are divided into levels of proficiency and focus on the writing sections of FCE, CAE and CPE. This is one aspect that makes the platform limited, as the activities are ready-to-use and do not allow for adaptations.

Taking the platform design and functioning into account, we carried out a discussion in class on how platforms have emerged in society and how immersed people are in interacting with them for daily use. Such a discussion was based on the platform principles, especially focusing on the platform anatomy key elements: data, algorithms, interfaces and ownership relations. Van Dijck, Poell and de Waal (2018, p. 9) conceptualize a platform "as a programmable architecture designed to organize interactions between users". Therefore, a platform not only encompasses technical elements but the congregation of social, political and geographical issues.

Platforms have been massively introduced in society after the century crossing, mainly due to the expanded supply of internet connection, the facilitation for acquiring digital devices and software development. In light of that, many platforms have been developed in the promise of facilitating daily activities (Van Dijck; Poell; De Waal, 2018). These platforms have entered diverse sectors and fields, which makes them valid and prosperous due to current demand. To mention some examples of such a statement, Uber is a service performed through a platform which is now part of the current social reality; delivery services like iFood are disseminated across the globe and they simply seem to grow every day.

The diversity in service offering is what seems to be one of the central elements for platforms to progress. Every time there seems to be a field unexplored, software developers target at bringing a new service to get a slice of the market. The field of academic writing seems to be following such a pattern, as the current automated feedback platforms envision to help writers in precise revision. The main argument and promise are that paying for a human reviewer is not worth it as it used to be. As feedback becomes quicker and less expensive when paying for a platform service, software developers have constantly explored the field.

Based on this, the teaching intervention included activities with two AWE systems, starting with Write & Improve. The first discussion served as a preparation for the subsequent assignments. In addition to copying and pasting the paragraph written in class into the platform, students were asked to answer the following questions: "Was Write & Improve easy to use? Was the feedback meaningful or relevant? Were you expecting anything else from the

platform? Would you use such a platform to improve your writing skills and why? Feel free to make additional comments as well". The purpose of these questions was to have students make meanings about the platform as a whole, especially the feedback provided. Table 8 brings the task assigned to the participants:

Table 8 - Engaging with Write & Improve

Homework/Assignment: As you were asked to write paragraphs for the last two classes summarizing the ideas conveyed in chapters 10 and 11, and as you had your classmates reviewing them, we want you to take another look at your maps to develop two paragraphs summarizing the ideas discussed in those chapters. We ask you to set clear topic sentences, consistent supporting sentences and evident concluding sentences. After doing that, submit your paragraphs to the "Write & Improve with Cambridge" platform (https://writeandimprove.com). Sign up or log in, select *W&I Advanced*, then *An essay: Teaching and Learning*, scroll down and click *ask later* if you are required to fill out a survey, scroll down again and write or paste your paragraph and then *check*. You will receive feedback if any change is needed. After checking the feedback, take a screenshot of the platform and attach it to a word file and make comments on your experience with the platform.

Source: Field research archive

Across the participants' responses, recurrent patterns emerged concerning the design, usability and feedback quality provided by Write & Improve. A dominant pattern is that most participants found the platform easy to use, but not immediately intuitive. Several noted that while the basic operations were manageable, the interface was overwhelming or confusing at first glance due to a cluttered or busy layout [P1, P3, P5, P12, P13, P21]. Some participants mentioned the need for external guidance or prior experience to navigate the platform effectively. There were multiple comments suggesting that the platform would benefit from a cleaner and user-friendly interface, especially for first-time users. Some participants also pointed out minor design issues, such as the small writing space.

Another major pattern across the participants was the varied satisfaction with the feedback provided. A number of participants appreciated the level indication such as B1 and B2 for intermediate proficiency, and found this labeling as motivating or informative [P5, P11, P18, P20]. However, many participants were disappointed by the lack of detailed or explanatory feedback, particularly about the meaning of yellow highlights or suggested changes [P1, P12, P14, P15, P24]. Some participants were confused about what the platform indicated to them to correct and expressed a desire for clearer suggestions. Others praised the feedback as accurate, useful, and motivating, indicating a variability in perception possibly related to the expectations or the types of submissions made.

Engagement levels varied, but many participants expressed a positive attitude toward using the platform in the future, especially if the usability and the feedback clarity were improved [P3, P4, P7, P13, P17, P21]. Some found the platform practical and helpful for monitoring their writing progress [P18 and P21], while others suggested they would prefer alternative platforms such as Grammarly [P20] or were hesitant to continue using it due to its confusing data issues [P5]. Others appreciated the diverse writing prompts and tasks, which encouraged them to practice more creatively.

In summary, the responses revealed that Write & Improve is seen as a valuable tool with strong potential, particularly appreciated for its automatic proficiency level assessment and general accessibility. However, issues with the interface design and the lack of assertive feedback were prominent concerns as well. Participants commonly suggested that improving clarity and streamlining the user interface could significantly enhance both the learning experience and user retention.

Overall, the participants had varied experiences with the Write & Improve platform for improving writing skills. Some found it easy to use but not intuitive, while others appreciated the feedback as meaningful and relevant. The platform was considered helpful for assessing writing skills, but some participants found the interface confusing. Improvement suggestions were desired, such as clearer instructions on editing. A cluster of opinions was shared regarding the usability, feedback quality, and the level of guidance provided by the platform. While many saw its potential for enhancing writing skills, there were also suggestions for improvement.

Progressively, participants were asked to use Grammarly for a written exercise and comment on the relevance of feedback, especially compared with the human feedback. Most participants found Grammarly intuitive, but some had trouble understanding its suggestions. The feedback was generally seen as helpful for grammar and text flow. Expectations varied, especially as some participants wanted more descriptive suggestions. Many participants mentioned that they would use Grammarly for spelling and grammar. Differences from human feedback included the automated response of Grammarly as being more focused on grammar, while professors would offer more nuanced feedback. Additional comments highlighted the value of human feedback for deeper analysis and subjective aspects of writing.

Across the responses to the assignment, recurrent patterns emerged regarding the design of Grammarly, the relevance and depth of its feedback, and the engagement of users with the platform. These responses revealed both strengths and limitations of Grammarly in

the context of writing improvement, particularly when compared to alternatives like Write & Improve and human feedback from professors. The participants were asked to engage with the platform and report on their experience in such activity, as Table 9 illustrates:

Table 9 - Engaging with Grammarly

Homework/Assignment: You were asked to write a paragraph in the first question of your written exam. In light of that, we want you to type that paragraph on the second writing platform we will be exploring this semester. Sign up for the free version of Grammarly [www.grammarly.com]. After signing up and logging in, follow these steps: My Grammarly, New, it will open an untitled document, when you start writing the platform will ask you to set some goals [select: Academic, General, Neutral and click Done, for instance]. Start writing your paragraph down completely or copy/paste and wait for the suggestions. Take a screenshot before accepting the suggestions so that we can see them as well, and download the file. Open the Word file you downloaded, keep the paragraph there, attach the screenshot and answer the following questions (Please, answer each question): Was Grammarly easy to use (and why)? Was the feedback meaningful or relevant (and why)? Were you expecting anything else from the platform (what exactly)? Would you use such a platform to improve your writing skills and why? Would you use Grammarly or Write & Improve in case you had to revise a text (justify, please)? What was the main difference between the professor's feedback and Grammarly's feedback? Feel free to make additional comments as well.

Source: Field research archive

A strong consensus emerged around the easy-to-use characteristic of Grammarly, especially concerning its intuitive interface, clean layout, and straightforward navigation. Participants described the platform as user-friendly, clear, and visually accessible [P3, P4, P12, P13, P14, P15, P21, P25]. Many appreciated the lack of overwhelming features, and the clarity of the review suggestion categories, such as correctness, clarity, engagement, and delivery, which helped streamline the revision process. Some users [especially P2] reported initial confusion, suggesting that first-time users might benefit from more introductory guidance or tutorials. Still, others highlighted helpful onboarding features or previous familiarity with the platform that eased their use [P3, P18, P21]. In general, the clean interface of Grammarly was seen as a strength, especially when compared to Write & Improve, which was described as more confusing or cluttered.

Regarding the feedback provided by Grammarly, participants commented on its grammatical accuracy and the specificity of corrections, especially in terms of spelling, punctuation, and word choice [P1, P3, P5, P9, P14, P15, and P25]. Many found the feedback meaningful and relevant, particularly for surface-level corrections and improving text fluidity. The ability to detect tone and offer clarity suggestions performed by Grammarly was also appreciated [P21 and P25]. However, several participants expressed disappointment towards the lack of deeper explanations or context for the corrections [P1, P14, and P15]. Many noted that Grammarly points out errors but does not always explain why they are wrong, leading to

missed learning opportunities. Moreover, the limitations of the free version, such as restricted access to premium suggestions or detailed explanations, were commonly cited as a drawback [P13, P15, and P24].

Expectations about the affordances provided by Grammarly varied across the participants. While some users mentioned that the platform met or exceeded their expectations by providing functional grammar support [P9, P12, and P25], others expected more contextualized or holistic feedback [P1, P14, and P15]. There was a recurrent desire for explanatory and instructive feedback, rather than a simple correction, particularly among users aiming to improve their writing over time, not only fix isolated mistakes. A few participants noted surprise at Grammarly offering more nuanced suggestions than expected, such as tone adaptation or word alternatives [P21]. However, the consensus leaned toward Grammarly being effective within its scope, that is, primarily focused on surface-level mechanics rather than content, argumentation, or textual coherence.

Most participants indicated a willingness to continue using Grammarly for writing improvement [P1, P4, P5, P12, P15, P21, and P25]. Their motivation stemmed from Grammarly being perceived as a real-time and quick-access tool to check grammar, spelling and improve clarity. Few participants preferred alternative tools due to better feedback quality or more instructional guidance. Some indicated that they use Grammarly regularly [P1, P5, and P14], often as a browser extension, which adds to practicality and integration into daily writing. There was also an interest in pairing Grammarly with human feedback or artificial intelligence platforms to enhance revision [P3 and P25], suggesting that users do not see Grammarly as a complete replacement for guided learning.

In light of this, AWE systems play a significant role in both the teaching of writing and the review process due to their ability to provide timely and targeted feedback. Unlike traditional methods where students may wait days or weeks for comments, AWE systems offer immediate responses, allowing learners to engage in continuous revision (Wilson et al., 2021; Zhang; Xu, 2022). This timely feedback reinforces writing skills by encouraging holistic practices, which is essential for mastering structure, grammar, and clarity (Meyer et al., 2023). In this sense, AWE systems can be used to supplement the teaching of writing, as teachers can assign tasks without being overwhelmed by a great deal of checking and grading.

A recurring pattern in feedback comparisons is that Grammarly is seen as more technical and automatic, while professors provide more personalized, context-aware, and holistic feedback [P1, P3, P4, P13, P21, and P25]. The suggestions provided by Grammarly

tend to focus on form over content, whereas professors offer insights on meaning and structure, which is a distinction many participants appreciated. When comparing Grammarly to Write & Improve, most found Grammarly to be easier, more efficient and more user-friendly, especially for short texts or basic corrections [P1, P14, P21, P25]. Write & Improve was valued for more in-depth suggestions [P13], but often criticized for confusing interface or overly academic focus.

Figure 13 - Example Feedback Provided by Grammarly
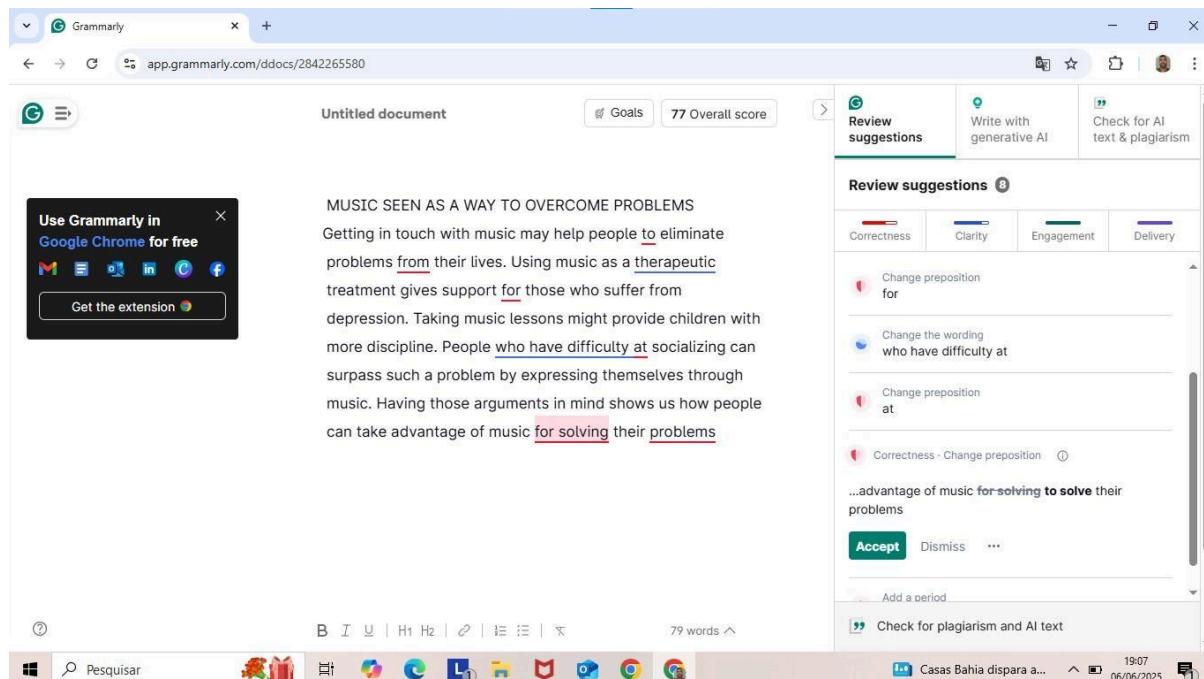
Source: Screenshot by the author

In summary, Grammarly was recalled by the participants in terms of accessibility, real-time feedback, design, basic grammar corrections and enhancing clarity. However, the lack of deep explanation and surface-level feedback limit its role as a stand-alone writing improvement platform. Participants viewed it as a helpful supplement rather than a replacement for human guidance. This suggests a pattern of engagement where users benefit most when combining Grammarly with other tools or personalized feedback, especially in academic writing contexts.

In addition, AWE systems can be designed to specific learning contexts, making the feedback more meaningful and relevant. They not only identify errors but also offer explanations and directions for improvement, fostering greater student autonomy and awareness of writing conventions (Graham et al., 2023). By guiding learners through the

revision process, AWE systems support the development of critical thinking and self-editing skills, which are crucial for long-term writing competence (Meyer et al., 2023). Considering the review process, such as peer-debriefing interaction or teacher-led assessment, AWE systems can serve as a first step of evaluation, simplifying the process and allowing human reviewers to focus on higher-order concerns such as content and argumentation.

4.4 The written exam and the oral test

The written exam was applied halfway through the semester with some purposes: the chance of assessing the overall content covered back then; the potential of having students compose a writing piece in the classroom and exploring grammar topics; and the opportunity to assess all the students since some of them had not responded to homework and classroom assignments. The written exam was divided into three blocks where each of them covered one of the major aspects explored during the semester, that is, the writing of paragraphs, the brainstorming of ideas based on a given text, and the understanding of how verb tenses work and what they mean.

The exam was worth ten marks and the students had about three hours to finish it. Focusing on the central elements of a paragraph, students were asked to respond to the following prompt: "Based on the map that was built during one of our classes, choose 1 (one) of the key words/ideas below to write a paragraph. Attention to its structure, which must be composed of a topic sentence, two supporting sentences and one concluding sentence" (Written Exam in Appendix). Across the lessons, students produced maps to summarize the concepts and ideas explored in the chapters of the book *Teaching to Transgress* (hooks, 1994). In light of that, the following map summarizes some topics discussed in class, and it was presented in the exam for the students to write a paragraph based on it:

Figure 14 - Concept Map from the Written Exam
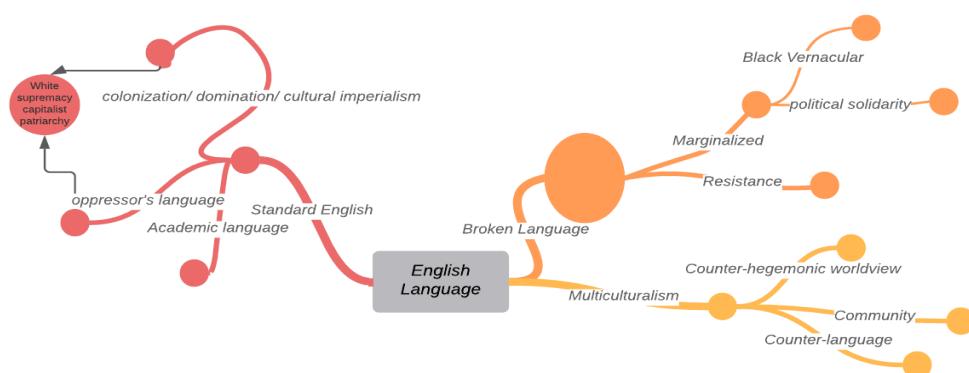
Source: Field research archive

The map in Figure 14 recalls central elements explored by bell hooks in the chapters covered in class. As already mentioned, all the grammar points and writing conventions were explained through the use of passages from the book with the aim of integrating such contents to concrete language input. The purpose was to teach meaningfully and contextually, as we approached the chapters through the ideas portrayed and not only as an excuse to teach grammar. The goal was to have students envision grammar as a contextual element embedded in meaning.

Accordingly, students were asked to write a paragraph based on the elements showcased on the map. The purpose of bringing a map was to make students recall the topics discussed in class but also remind them of the relevance of brainstorming in writing. Correspondingly, they were asked to write a full paragraph by providing a topic sentence, two supporting sentences and one concluding sentence, as illustrated below. They also had to indicate which ideas mentioned on the map were chosen. Figure 15 brings the first question of the written exam:

Figure 15 - Building a Paragraph

Key word/idea chosen: _____

Paragraph

Topic sentence:
_____
_____
_____

Supporting sentence 1:
_____
_____
_____

Supporting sentence 2:
_____
_____
_____

Concluding sentence:
_____
_____
_____

Source: Field research archive

This is a classic paragraph structure and students had the opportunity to practice such a structure, as it is one of the requirements of the course. The second question required students to build their own concept or visual maps based on a paragraph from chapter 3 [Embracing Change]. This question aimed to provoke students to envision writing as a

multimodal activity where we use diverse modes [images, sounds, and typographic texts] in order to make meanings and develop new texts. Below, there is a fragment of chapter 3 from the book *Teaching to Transgress* used in the written exam, where hooks (1994) identifies key elements to consider while discussing learning as a social practice:

> Students taught me, too, that it is necessary to practice compassion in these new learning settings. I have not forgotten the day a student came to class and told me: 'We take your class. We learn to look at the world from a critical standpoint, one that considers race, sex, and class. And we can't enjoy life anymore'. Looking out over the class, across race, sexual preference, and ethnicity, I saw students nodding their heads. And I saw for the first time that there can be, and usually is, some degree of pain involved in giving up old ways of thinking and knowing and learning new approaches. I respect that pain. And I include recognition of it now when I teach, that is to say, I teach about shifting paradigms and talk about the discomfort it can cause. White students learning to think more critically about questions of race and racism may go home for the holidays and suddenly see their parents in a different light. They may recognize nonprogressive thinking, racism, and so on, and it may hurt them that new ways of knowing may create estrangement where there was none (hooks, 1994, p. 42-43).

Several insightful results that reflect both the emotional and intellectual complexities presented in the passage were expected. For evaluation, the maps should center around key themes such as compassion in learning, critical consciousness, pain in transformation, and paradigm shifts. Students should illustrate connections between learning and emotional responses, such as how adopting a critical perspective on race, sex, and class can lead to discomfort or alienation. Branches of the map could explore the impact of this awareness on personal relationships, particularly the example of white students reevaluating familial beliefs.

Additionally, the concept of teaching with empathy and acknowledging discomfort was expected to be visually linked to the teacher's evolving approach. Overall, the maps should visually convey the interconnectedness of identity, education, emotional struggle, and social awareness as articulated in the citation. Finally, the idea was to have students brainstorm and think of the map as a way of implementing the writing of a paragraph.

In the third question, students were asked to select two sentences from the chapter *Introduction* (hooks, 1994) and analyze them regarding grammatical tense and aspect. They were expected to identify the tense [past, present, future] and the aspect [simple, progressive, perfect, perfect progressive] of such clauses. Additionally, students had to explain how the aspect contributes to the meaning or function of the sentence, such as indicating an ongoing, incomplete, or habitual action.

Students were provided with an example sentence that demonstrated how to identify and explain tense and aspect to guide their analysis. For each selected sentence, students had to write the full example, identify its tense and aspect, and then offer a brief explanation of what the aspect reveals about the nature or timing of the action. The goal was to demonstrate an understanding of how tense and aspect work together to shape the meaning of verbs in context.

As the participants were majoring in English, the oral test assigned provided an experience that integrated individual oral practice with the professor. These one-on-one sessions allowed students to engage directly in spoken English, offering a personalized space to demonstrate their communicative competence. The test was designed to assess not only fluency and accuracy in speech but also the students' ability to engage critically with multimodal texts. The format encouraged active participation, critical listening, and spontaneous oral expression, placing students in a real-time communicative context.

A key feature of the test was the incorporation of multimodal resources, including visual input such as pictures and a TikTok video clip titled *bell hooks on Beyoncé and White Magazines*. The short clip prompted students to analyze the meanings of hooks' commentary on cultural representation, media, and identity. The test blended listening and speaking skills, as students were required to listen attentively, comprehend nuanced messages, and articulate their interpretations. They were asked to identify not only what was said but also how it was expressed, paying close attention to tone, emotion, body language, and other nonverbal cues. The task fostered critical thinking and encouraged students to approach language as a complex and dynamic mode of communication.

In addition to the media analysis, students were asked to reflect on their overall experience in the course. This part of the oral test served as a metacognitive exercise, inviting them to connect their personal learning journey with the content explored during the semester. This was relevant as the course had focused heavily on the review of English verb tenses through the reading of the book *Teaching to Transgress* (hooks, 1994), merging language with critical pedagogy. Finally, students were able to contextualize grammar in discourse, reflecting on how language structures function within broader social and cultural narratives.

The assessment criteria for the oral test were designed to provide a balanced evaluation of both language competence and critical engagement. One core element was the use of compensatory strategies, which referred to the students' ability to manage communication breakdowns, such as paraphrasing, using fillers, or rephrasing when facing

lexical or structural difficulties. Additionally, the criterion of appropriate response to a situation assessed how well students adapt their language and tone to the context of the discussion, particularly when interpreting and responding to the ideas presented in the TikTok clip. These criteria acknowledged the dynamic nature of spoken communication and valued the student's ability to maintain meaningful interaction even when faced with challenges.

The remaining criteria focused on grammar, intelligibility, and the relationship between the TikTok clip and the ideas displayed in *Teaching to Transgress*. Students were expected to demonstrate commands of the grammar structures studied during the course, particularly verb tenses, while maintaining intelligible pronunciation and rhythm. A critical part of the evaluation involved the student's ability to connect the content of the TikTok clip, where bell hooks comments on Beyoncé and media representation, with the broader arguments in the book, especially regarding education, resistance, and cultural critique. This final component assessed how effectively students synthesized the multimodal input with theoretical content, promoting not only language accuracy but also interpretation and sociocultural awareness in spoken English.

The evaluation was holistic, as students were graded based on their performance while also receiving constructive feedback on both their listening and speaking skills. This dual approach supported student development by highlighting areas of strength and offering targeted suggestions for improvement. In summary, the oral test experience represented a culmination of integrated language practice, critical engagement with media, and self-reflection, which are hallmarks of a transformative language learning environment.

4.5 Final presentation

For the final presentation of the semester, students were asked to work collaboratively in groups of three or four to design and present a grammar lesson for High School. The task required each group to select a verb tense and teach it through the lens of one of the chapters from *Teaching to Transgress* (hooks, 1994), which had been previously read and discussed in class.

The challenge was not only to teach grammar but to do so meaningfully by grounding it in the critical pedagogy and themes explored, such as engaged pedagogy, liberation, and the politics of voice. Students were advised to identify a central theme from their chosen chapter and use it as the conceptual foundation for the grammar lesson. The goal was to have students consider context and meaning while planning a lesson. Table 10 brings the assignment provided to the participants:

Table 10 - Final Presentation

Final Presentation: in groups of three or four, choose a verb tense to be taught by using one of the chapters read in class. Think of a teaching aim scaffolded by learning/teaching objectives for High School students. It might help if you find a central theme in the chapter and then develop everything from it. After choosing these elements, create an initial prompt to ask for a lesson plan on chat gpt or another generative system [mention such detail]. You'll probably have to adapt the prompt some times in order to intertwine the verb tense, the chapter and the target audience in a more appropriate way. Please, catalog the process and the needed adaptations you had to implement to get the final version. Now, I want you to draft that out in class and show me.

Source: Field research archive

Groups were instructed to develop a clear teaching aim, which should be scaffolded by specific learning and teaching objectives appropriate for a High School audience. This meant considering both the cognitive level of the students and the sociocultural relevance of the content. The verb tense selected had to be integrated into a social theme in a way that felt authentic, encouraging learners to not only practice grammar but to also reflect critically on the lesson content.

To assist with lesson planning, students were encouraged to use generative tools such as ChatGPT or similar artificial intelligence systems. Each group drafted an initial prompt that included the grammar point, the chapter theme, and the student profile. It was expected that the first attempts would require refinement. Progressively, the process included revising and adapting the prompts to have lesson plans adequate to the context indicated and the pedagogical aims of the assignment. Students were encouraged to implement a critical stance when analyzing the output provided by the large language models, especially in terms of hateful content.

Analyzing the texts and multimodal texts generated via artificial intelligence from a critical standpoint is essential to uncover power relations, especially in terms of gender, ethnicity, and class (Smith, 2023; Araújo, Araújo, 2024). As large language models are trained on vast datasets, they end up reflecting social dilemmas, biases, and historical violence towards marginalized groups (Araújo, 2024). As a result, some texts may reproduce and amplify sexist, racist, or classist narratives, even when they are subtly present. In this sense, a critical perspective helps to interrogate such outputs, exposing the potential of such engines in perpetuating violent content and marginalizing specific groups, especially when they are considered to portray content neutrally (Smith, 2023; Araújo; Araújo, 2024).

Groups were required to document the process, detailing what did not work according to what they requested, what had to be rephrased, and how the final version was established. This step was crucial not only for transparency but also for metacognitive development, as it allowed the students to reflect on the planning process and their engagement with both artificial intelligence and critical pedagogy.

In this sense, examining these generated outputs from a critical standpoint helps to ponder how meaning is made within cultural, historical, and political contexts. When outputs contain racist content, for instance, it relates to a broader spectrum of excluding language (Smith, 2023). Identifying the complexity of using large language models is vital for consolidating equity in education, especially through the constant questioning of oppressive narratives (Araújo, 2024; Araújo; Araújo, 2024). Therefore, a vigilant stance is required both when engaging with the texts generated by large language models but also when providing room for discussing eventual social dilemmas portrayed in such texts.

The outcomes of this assignment varied. Some drafts initially lacked cohesion between the grammar point and the social theme, which required significant redrafting. Others struggled to align the tone and content with the maturity level of High School students. However, through collaboration and feedback, most groups were able to produce meaningful and creative lesson plans.

The final presentations showcased a diverse range of approaches, from role-playing activities and critical discussions to multimedia integration, all aimed at making grammar instruction relevant and meaningful. The process emphasized not only teaching language, but using language as a tool for critical inquiry, in line with the educational perspective advocated by hooks. However, the process of adapting the prompts and editing the lesson plans was not so well cataloged by the students, which caused questions regarding such an element after the presentations.

All in all, considering the social context of students is essential when planning classes, which herein entails crafting appropriate prompts to generate lesson plans via large language models (Dos Santos; Boa Sorte; De Oliveira, 2025; De Oliveira; Dos Santos, 2025). As language education is directly concerned with identity, culture, and power relations, lesson planning should consider the students' background and the social reality where the school is located (Griffiths; Keohane, 2000; Woodward, 2001; De Oliveira; Jones, 2023). Finally, prompts used to guide large language models in lesson planning should propose inclusive and equitable pedagogical perspectives, while also being critically checked to avoid harmful content (Smith, 2023).

4.6 The categories of analysis

Based on the perspective of a priori categories proposed by Freeman (1998), five groups were previously established as the categories of analysis: reference, agency, structure, context, and interest. These categories were decided based on the functions of meaning (Cope; Kalantzis, 2020; Kalantzis; Cope, 2020), where each of them represents elements involved in the process of meaning-making.

In face of this, all the participants' reports from the short-term papers and their answers to a questionnaire were considered in a process of filtering data for each category. In order to have participants report on both their relationship with writing and the use of AWE systems, four short-term papers and forms were applied during the teaching intervention. Table 11 brings the prompts provided to the participants:

Table 11 - Short-Term Paper Prompts

Prompt 1	How would you describe your experience with writing in English? When and why do you normally write?
Prompt 2	What is your relationship with English like [how you started learning it, what you like about it etc.]? Why did you choose to major in English language in college? What has it been like to focus on writing in English during this course?
Prompt 3	Was Write & Improve easy to use? Was the feedback meaningful or relevant? Were you expecting anything else from the platform? Would you use such a platform to improve your writing skills and why? Feel free to make additional comments as well.
Prompt 4	Was Grammarly easy to use (and why)? Was the feedback meaningful or relevant (and why)? Were you expecting anything else from the platform (what exactly)? Would you use such a platform to improve your writing skills and why? Would you use Grammarly or Write & Improve in case you had to revise a text (justify, please)? What was the main difference between the professor's feedback and Grammarly's feedback? Feel free to make additional comments as well.

Source: Field research archive

It was relevant to have students write about their conceptions on their relationship with language, writing, and the use of the AWE systems. This helped to understand such conceptions as realms that were not isolated but the result of coherent social stances. For instance, a central element was inquired when the participants answered about their previous relationship with English language writing as seen in Figure 16:

Figure 16 - Prior English Studies

Did you have any guidance as to writing academically in English [paragraphs, essays, articles] before joining UFS?
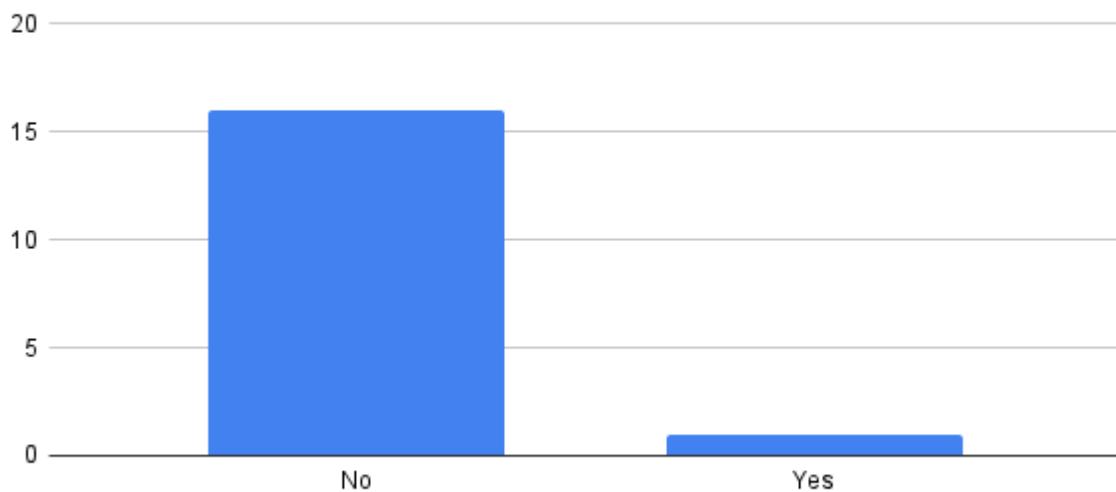
Source: Field research archive [questionnaire]

Most participants reported on not having been instructed in English language writing before joining higher education. This can speak to the fact that writing is not a skill frequently explored in elementary education, as commonly reported in the literature of English teaching in Brazil (Paiva, 2012; Santos, 2012). Besides the numerous groups of students in the classroom, the lack of commitment by students and the unfortunate effects of precarious teacher education speak for such a scenario (Paiva, 2012). In addition, it might also be the mirror of preference in terms of language skills and language practice.

After organizing the data from the reports, I explored such reports in light of the five meaning-making functions: reference, agency, structure, context, and interest (Cope; Kalantzis, 2020). *Reference* identifies and represents, that is, it is concerned with the background or to whom/what the text relates. *Agency* encompasses social action immersed in communities of practice. *Structure* entails organization and design, which is the overall projection or representation of meaning. *Context* locates the meanings as historical, geographical, cultural, and subjective realms. *Interest* labels the intentions, purposes, and uses of meanings (Cope; Kalantzis, Zapata, 2025). Figure 17 illustrates a summary of core elements streamlining each category:

Figure 17 - Core Elements of Meaning Functions in the Data

First, the focus was established as to what should be looked for in the data. Five rounds of data filtering were performed based on the categories aforementioned. Each round followed the same pattern, only differing in terms of the core of each category: *what are the elements reported by the participants which relate to the idea of reference/agency/structure/context/interest*? Each function was investigated separately in order to equalize the relevance of the five functions, which prevents the researcher from privileging one category over the others.

4.6.1 Reference

Reference is defined as the meaning function that identifies elements, actions, and their qualities, whether concrete or abstract (Cope; Kalantzis, Zapata, 2025). It was possible to spot recurrent patterns across the participants' responses that reflected their attempts to name, delineate, and negotiate their experience with writing in English, particularly through the lens of personal and academic engagement and their interaction with the AWE systems.

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[9] NapkinAI. Create a map of writing practice, categorizing key elements into five distinct areas: reference, agency, structure, interest, and context. Each category encompasses specific aspects crucial for effective writing development and practice. This map should serve as a framework for understanding the multifaceted nature of writing, emphasizing guide instruction, self-assessment, and the cultivation of a holistic writing approach. These are the central elements of the five functions of meaning according to the following concepts: Reference (who or what it is about), Agency (what is happening), Structure (how things are designed), Context (when and where meanings happen), and Interest (what is this for). Napkin 2025 version on June 20th 2025. Artificial Intelligence. Accessed on: June 20th 2025.

Many participants referred to realms and concepts that embody their struggles or strengths, enacting the function of reference to express internal states and identity in relation to English. For example, P1 described English as "a limiting but free experience" and spoke of the English language and the human experience as referential constructs. These terms reflect abstract entities that anchor their experience and critique the expressive limitations of English when compared to Brazilian Portuguese. This is in line with the idea of reference to abstract concepts as representation and social function of language.

Others, such as P2, used reference to express self-perception, as in "I'm insecure" and "my English is not so good", establishing identity through a referential lens of ability. P3, P4, and P5 made frequent use of generalized references such as grammar mistakes, assignments, tests, and basic vocabulary to outline what writing entails and what challenges it presents. These codes served to externalize internal anxieties and make their writing difficulties socially intelligible, as in the following excerpts:

> *Participant 3*: Writing was the skill that I did not practice too much when I was studying English in the beginning, so it's the most difficult to me. I normally write in English to practice specifically that skill myself or when a test is coming.
> *Participant 4*: Well, my writing is comfortable to read because my vocabulary is basic. I can read more than I write, and I still make grammar mistakes. I write in English in assignments or when I text some friends.
> *Participant 5*: My experience writing in English is very basic. I have written only for my tests here at UFS since the first semester. Sometimes, I write my daily routine and some notes, poems and duties to do all the day or week long.

Participants also used reference to identify actions, especially for the circumstances and purposes of writing. Recurrent verb phrases such as "write", "practice", "take notes", and "rewrite" surfaced in the reports. These verbs situated the participants in active roles as language users, while also delineating the contexts in which writing occurs. Some of them [P6, P15, and P18] write daily notes or establish to-do-lists as a practice of writing. This kind of self-regulated learning becomes a site of habitual reference, connecting abstract concepts such as self-improvement or language internalization to tangible actions such as writing to-do lists or daily routines.

> Participant 6: Satisfying, although I make a lot of silly little mistakes. I usually write in English in my notebook, like notes and stuff. I do it to work on my skills and make them better.
> Participant 15: I struggle a lot with writing in English because of grammar, so I try to practice as much as I can. I write in English everyday, I try to write my to-do list in English but sometimes I do it in Portuguese as well. I have a Twitter account where I use English when I'm writing in my journal.

Participant 18: I would say it's frustrating sometimes because I get really upset when I write a word in the wrong way even though I knew it orally. It took me some time to figure out why I was so bad. I normally write what I have to do during the day in English in the morning, and also to take notes about books. I normally write in English because I think it's a great exercise for my brain to internalize the structures of the language.

Such feelings and perceptions lead to the concept of impostor syndrome (Hutchins, 2019; Casanave, 2019), where students envision references of quality and performance and never feel they belong to academic settings. In these reports, the participants often refer to writing as embedded in institutional and social frameworks, as displayed through references to college, English literature classes, assignments, professors, or even X [Formerly Twitter]. These institutional and technological references serve to contextualize and legitimize their writing practices, suggesting that reference functions construct writing as both a social and academic performance.

Some reflections on Write & Improve foregrounded the role of reference in interpreting the feedback provided. A common concern involved the ambiguity of highlighted segments, e.g., yellow-marked text, which were not adequately explained according to the participants. For example, P12 referred to parts of the text highlighted in yellow and questioned what exactly the platform suggested the user to change. This shows a breakdown in reference, as the platform signaled the need for change but failed to clearly name or define the expected editing.

While AWE systems offer semantic suggestions that improve clarity and consistency, they still require writers to apply pragmatic judgment when integrating such feedback. The appropriateness of a given suggestion often depends on context, tone, purpose, and audience, which are elements that may not be fully captured by automated analysis (AI-Inbari; AI-Wasy, 2022; Meyer et al., 2023). Thus, writers must critically assess whether a suggestion enhances or not their intended meaning and rhetorical goals. This interplay between automated support and human discernment underscores the complementary role of AWE systems in fostering sophisticated writing, blending technological precision with the nuanced understanding only humans can provide (Link; Mehzard; Rahimi, 2020).

Moreover, participants employed referential language to critique the affordances of the systems. Codes such as level, feedback, suggestions, and interface were used to name and assess the central elements that constitute the platforms. These references both describe and evaluate the functionality of the platforms, reinforcing the notion that reference delineates

qualities and quantities associated with relevant realms (Cope; Kalantzis, 2020), such as usability, clarity, and usefulness.

Across their descriptions of writing experiences and their interactions with the AWE systems, participants consistently employed the function of reference to make sense of their evolving identities as English writers. Whether referencing their emotional states ["I'm shy" and "I'm frustrated"], the structures they engage with, e.g., essays and tasks, or the technologies that mediate their writing development, participants actively construct a network of meanings that help position their writing within broader educational and personal trajectories. These referential choices revealed how language becomes a tool for students to locate themselves in relation to learning and language proficiency as they label them at certain levels:

Figure 18 - Students' Perceptions on their Proficiency Level
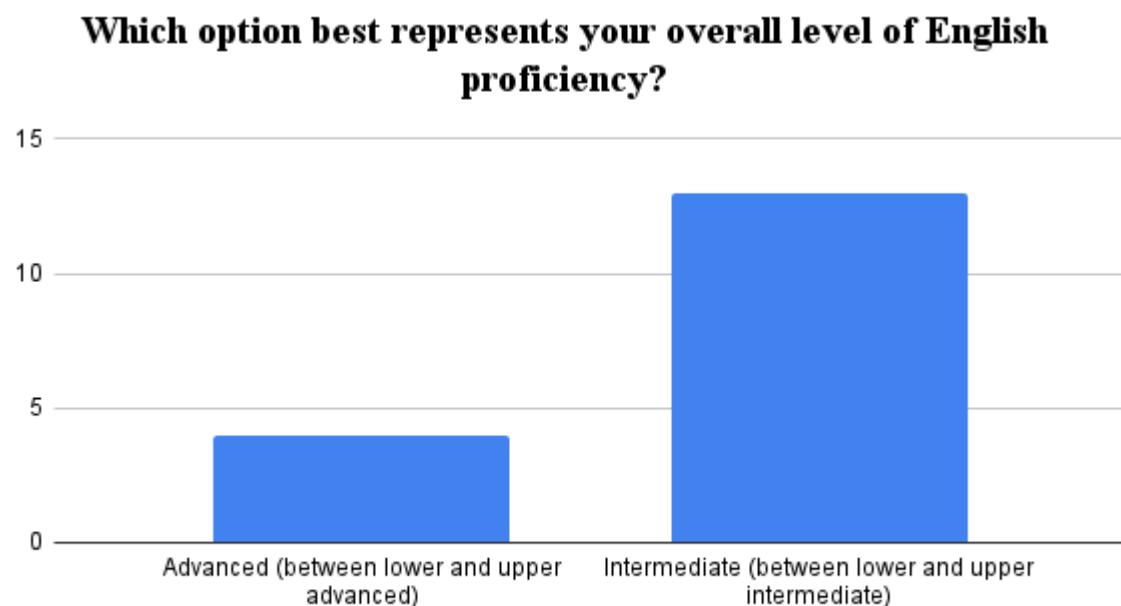
Source: Field research archive [questionnaire]

Most participants located themselves in the official level of term, that is, students from intermediate level taking English language V. The participants who labeled themselves as advanced students have similarities such as having studied in language schools before the university and being currently English instructors in those schools. Another relevant element of reference concerning proficiency is that most participants considered the ability of listening and speaking as parameters for labeling someone as proficient. This can be attested both in their reports and their answers to the questionnaire:

Figure 19 - Listening and Speaking as Pillars of Proficiency

Given the options below, which one best represents your strongest language skill?
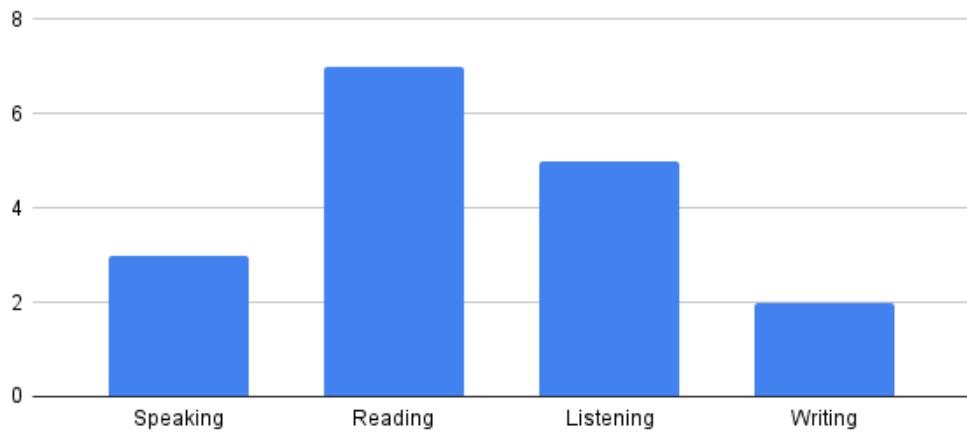
Given the options below, which one best represents your weakest language skill?
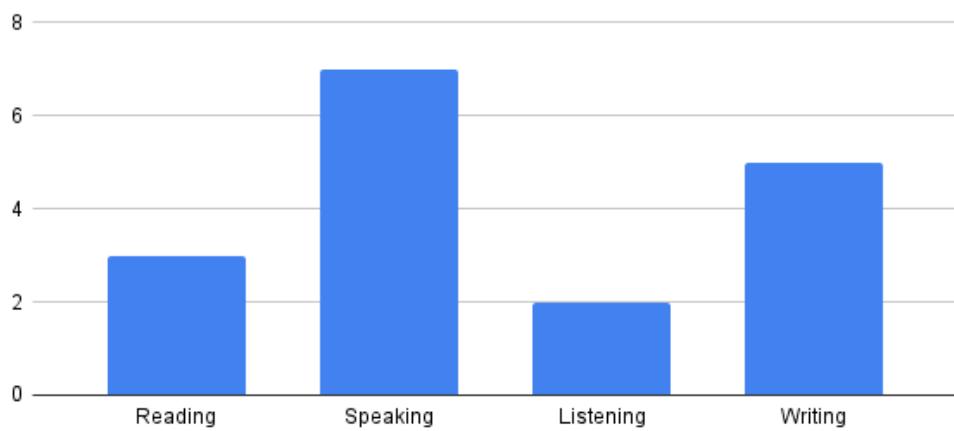
Source: Field research archive [questionnaire]

The conception of reference as the function by which language identifies entities, actions, and their properties (Cope; Kalantzis, 2020), provides a valuable lens through which to examine the participants' discourse, especially in their experiences with writing and the use of AWE systems. Across the narratives of the participants, there was a recurring concern with their ability to use language, especially English, as a tool to refer to their experiences, ideas, and feelings. This aligns with the notion of reference (Cope; Kalantzis, 2020) as the delineation of beings, actions, and states.

Several participants, such as P1, expressed a linguistic limitation in English, as they feel that their level prevents them from expressing their lived experiences and the human experience they wish to describe. This concern illustrates a gap between referential intention and referential realization, when someone wants to express but cannot do so as richly as in their native language. Thus, the issue of reference is connected to cultural and linguistic domains.

P2 reported the insecurity about "writing something wrong", which projects a concern not only with grammar but also with the ability to accurately represent actions and attitudes, two core components of reference. The fear of misrepresentation in writing highlights the centrality of reference in making meanings, where the participants have a reference of what good writing is. This anxiety indicates the awareness that poor referential choices, e.g., incorrect nouns or verb forms, may lead to miscommunication.

P3, P4, and P6, who described their writing as difficult or basic, underscored their struggles with reference by indicating challenges in vocabulary and grammar. Their limited lexical repertoire affects their ability to invoke the precise referents required to construct meaningful discourse. For instance, P4 mentioned that their vocabulary is basic which makes their writing more comfortable to read, suggesting a restriction to general or familiar references rather than complex or abstract ones.

P12 presented a case in referential complexity. This participant reported on writing creatively and frequently, indicating that he engages in creative writing through Dungeons & Dragons. In this sense, reference becomes an active process involving the creation of imaginary entities, actions, and states. Creative writers try to find nouns to represent characters, artifacts, and places, and carefully choose verbs to describe actions within these imagined worlds. Conversely, the frustration with having to "rewrite things a thousand times" reflects the ongoing difficulty in selecting the right referential items to realize an internally consistent narrative.

Similarly, P15 used English on X [Formerly Twitter] and in journaling, which are acts of public and private reference respectively. Whether describing daily tasks or expressing internal states, the effectiveness of their writing depends on the accuracy and appropriateness of their referential choices, which links back to the emphasis on reference as the means to delineate beings and events in reference to social context.

Other participants, such as P5, mentioned that while receiving a level indicator, e.g., B1, the feedback was not efficient in diagnosing where their writing failed in terms of meaning. The feedback did not differ between general and specific reference, and it was not

precise whether verb choices failed to capture the intended actions clearly. This made it difficult for learners to improve their writing in a way that aligns with the purpose of reference in academic or creative contexts.

What emerged across the writing experiences and the AWE systems interactions was a recurrent desire to name experiences, that is, to spot concepts, actions, and qualities in a foreign language in precise and appropriate ways. Participants were not only grappling with grammatical correctness but also striving to mean accurately. Many testimonies, especially those from participants who are creative writers, displayed a deep engagement with language as a symbolic system.

They were attuned to the importance of naming things correctly, being grammatically assertive, and choosing the most expressive descriptors for qualities or feelings. Participants who felt constrained in their writing often located the problem in not being able to find "the right words", which is a direct reflection of their struggle with reference. This resonates powerfully with the idea that reference is not only a structural function but a meaning-making function, that is, an attitude of making reality legible through language.

4.6.2 Agency

Agency can be defined as the identification of meaning through human action and the roles individuals assume in communities of practice (Cope; Kalantzis, 2020). All things considered, the participants' responses revealed recurrent patterns that reflect their agency in both writing and using AWE systems such as Write & Improve and Grammarly. Across the narratives, participants negotiated roles such as writer/reader and learner/system user, illustrating how they make meanings and position themselves in their learning processes.

Many participants perceived writing in English as both a constraint and an opportunity, reflecting an active negotiation of identity and control over language. P1, for instance, described English writing as "limiting but free", noticing structural restrictions in vocabulary while simultaneously embracing the expressive possibilities that English provides, especially in academic genres. This duality reveals agency as the participant identifies and navigates the affordances and limitations of language systems to fulfill communicative acts.

Similarly, P5, P15, and P18 demonstrated agency through their efforts to incorporate English writing into daily life, such as journaling, making to-do lists, or taking notes of readings, thereby enacting roles of independent writer and self-directed learner. These practices show how the participants use writing to express themselves and enhance their

language competence, underscoring the idea that agency entails selecting and shaping actions in meaningful contexts (Cope; Kalantzis, 2020).

Participants also expressed agency through resistance and vulnerability, particularly in their emotional responses to writing challenges. P2, P13, and P14 spoke of fear, insecurity, and frustration, emotions that signal awareness of their position in the writing dynamic. While these feelings may initially seem disempowering, they also reflect the participants' recognition of writing as a meaningful and evaluative act, where their roles as learners, users, and meaning-makers are constantly challenged. For instance, P12, who mentioned struggling with grapho compulsive disorder, described a compulsion to rewrite until the text "feels right", which highlights a hyper-awareness of how meaning is constructed and represented. This sensitivity reflects a profound engagement with the design and redesign of communication (Cope; Kalantzis; Zapata, 2025), a core element of agency.

When examining the reported experiences with the Write & Improve platform, the function of agency was salient in how they respond to technological mediation. Many participants [P1, P3, P4, P5, P12] criticized the feedback mechanisms of the platform, pointing out ambiguities in the suggestions and the interface. However, these critiques did not represent passive dissatisfaction; rather, they reflected expectations that their writing would be meaningfully interpreted and developed through with the help of precise feedback, as in the following excerpts:

> *Participant 1*: The platform is easy to use but not really intuitive, the feedback was interesting and clear about the words I should change on the text, but I couldn't find any tap detailing the changes I should make on some sentences that were highlighted by the AI (not really intuitive). I think I would use it if I were more familiar with the system, but without knowing what it wants me to improve I wouldn't really feel comfortable to use it.
> *Participant 3*: I found it easy to use, but the interface is confusing at first look, due to a lot of information on the screen.
> *Participant 4*: I found the platform a bit confusing as I had guidance from the professor on how to use it and without such guidance I wouldn't use it easily. The suggestions were nice and they helped me assess my writing skills as it measures that in an effective way and says which level I'm at. To sum up, the platform is a bit confusing at first sight, but it's helpful and I plan on using it in the future.
> *Participant 5*: I found it a good alternative to check how our writing is in English, however, I didn't find it intuitive at all, it has a lot of information and much of it is difficult to understand. The proposal is good but the execution was quite confusing. It is complicated to use due to these previously exposed factors, the feedback did not provide relevant information [...]. I would use another platform for the same purpose to monitor my writing progress. It is very important to check where we are at, but I expected a little more.

Participant 12: Although the platform seems easy to use, I didn't quite understand what exactly is the purpose of marking parts of the text yellow. It'd appear to be a part of the text it is recommending me to change, but not into what exactly, nor why. Otherwise, it'd appear the platform liked my text very much and had nothing major to change, so there's not much else I could say in regards to the feedback given. The platform itself has quite a busy UI, which makes it a bit tiresome to navigate, but it seems easy enough to use once you get a good grasp of it. I probably would use it more if it gave me some suggestions on what specifically to change.

The recurrent expectation towards the feedback underscores the participants' assumption of the user role, as they not only received feedback but actively assessed its relevance. P12, for instance, questioned the logic behind the color-coded suggestions provided by the platform, seeking clarity on how to revise meaningfully. This questioning is an enactment of agency, as the participant attempts to co-construct meaning with the digital tool rather than submitting to it uncritically.

Participants also demonstrated agency through their reflective engagement with writing as a social and cognitive practice, and with AWE systems as tools to mediate their learning. They assumed active roles, such as writer, reviewer, and learner, and continually assessed how effectively these platforms and practices could help them express and make meaning. Whether through embracing challenges, resisting unprecise feedback, or reshaping routines to include writing in English, the participants' discourse affirmed that agency in writing and digital interaction does not have to be static.

Otherwise, it should be dynamic, entailing negotiation of meaning, identity, and action. Based on the concept of agency (Cope; Kalantzis, 2020) as the identification of meaning through human action and the roles enacted in communicative processes, recurrent patterns across the responses reflected agency in writing and engagement with AWE systems. The reports highlighted how the participants construct and negotiate agentive roles as writers, learners, designers, and users.

Additionally, agency was established in the reports as self-positioning through writing. Many participants perceived writing in English as a way to express identity, develop skills, or engage with the world, even when there is limitation and struggle. These narratives showed agency as a conscious attitude, especially when challenges arise in the process. Participants assign roles to themselves, e.g., reflective writer and creative user, which is at the core of what Cope and Kalantzis (2020) describe as the function of agency in meaning-making.

Agency was also represented through learning endeavors and motivations. The learning narratives revealed agentive decisions showcasing emotional, cultural, and

professional goals. Several participants [P2, P4, P5, P10, and P15] identified music, games, or media as gateways into English, which positions them as users of language resources to make meaning. They mentioned how cinema influenced their path to teaching, showing agency not only in language use in daily life but also with pedagogical goals. Some presented a pragmatic engagement, which was motivated by dreams of international education.

These learning narratives demonstrated causal patterns in agentive action, where participants are not mere passive recipients of instruction but active constructors of their language narratives. Agency was also represented as confronting personal or intellectual limitations. Several participants displayed self-awareness of their struggles, such as grammar, vocabulary, fluency, but also demonstrated agency when working to overcome them.

P18 and P20 openly described frustration but seemed to cope with persistence and growth. P18, in particular, reflected metacognitively on the science of learning, showing high agency in analyzing the process. P26 acknowledged difficulty in expressing thoughts but still framed writing as a meaningful exercise. This balancing act between struggle and intention marks active engagement with writing despite frequent challenges. Thus, agency manifests in resilience and self-monitoring, as participants acknowledge their roles as both writers and autonomous learners.

Agency was recalled in the use of Write & Improve and Grammarly as well. The interactions with Write & Improve exposed a complex negotiation of agency, particularly from a writer standpoint. P1, P4, P5, and P12 expressed confusion or frustration with the interface and opaque feedback of the platform. The lack of clarity diminished their ability to deal with the feedback, which reduced their agency as writers. However, P3 and P7 saw value in the quick, practical feedback, positioning themselves as active users who can extract benefit despite design shortcomings.

P11 underscored the need for guidance, suggesting that external scaffolding restores or enables agency in unfamiliar digital environments. This pattern showed that digital tools can either enable or constrain agency, depending on their usability and the transparency of their feedback mechanisms. Participants who felt in control of the interaction with the AWE systems reclaimed their agency, while others felt that there was not much room for agency.

Agency was established as a movement of setting roles in social interaction. The discourse also highlighted how participants enact or reassign roles across social and academic contexts. P21 and P26 moved between casual peer interaction and academic contexts, adapting writing styles accordingly. This fluid transition between user and peer roles showcased situational agency. P10 and P12 mentioned how writing helps them "think in

English" or "exercise the brain", revealing internalized cognitive shifts that come from intentional practice, aligning with the perspective of acts of meaning (Cope; Kalantzis, 2020). In conclusion, the discourses revealed varied enactments of agency across writing practices and the use of AWE systems. The meaning-making was shaped by personal experience, social context, and technological mediation, where patterns of action define roles such as learners, writers, designers, and users.

4.6.3 Structure

Based on the narratives and the multimodal conceptualization of structure (Cope; Kalantzis, 2020), the organization and design of meaning across forms such as text and image, and the interconnection in these systems, the participants expressed concerns towards structure in two main domains: their own writing practices and their interaction with the AWE systems. This revealed their concerns with structure in writing, especially when they expressed concerns about grammar skills and writing conventions, as in Figure 20:

Figure 20 - Concerns about Structure

Which option best represents the hardest aspect(s) for you when writing in English?
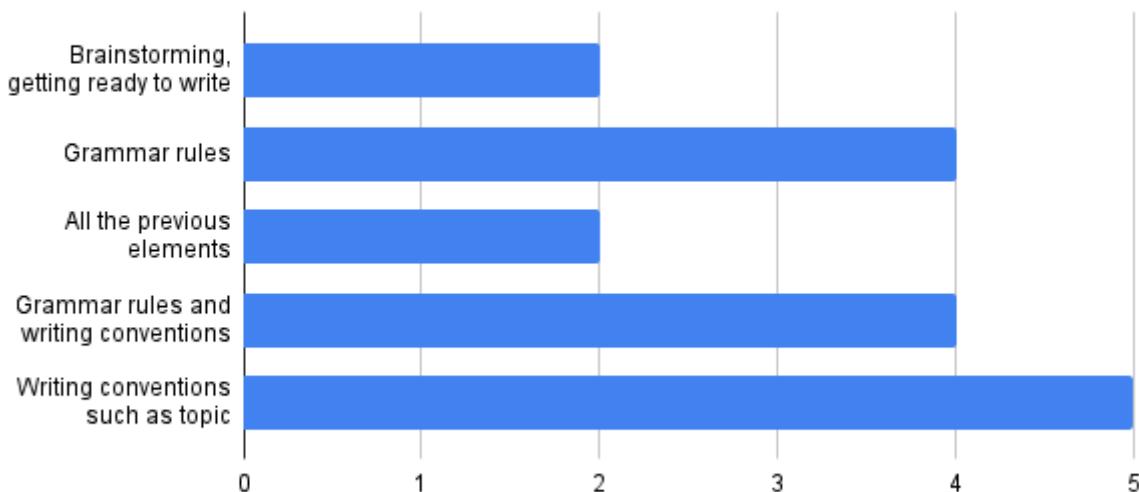
Source: Field research archive [questionnaire]

Some reported experiences with writing in English revealed a tension between their intention to express meaning and the structural constraints of the language, especially in terms of designing texts academically adequate, as shown in Figure 20. Many participants [e.g., P1, P5, P15, and P18] spoke of writing as a space of both limitation and potential, and a process that demands solid organization of ideas within a language system they often

perceive as foreign (Cope; Kalantzis, 2020). This reflects concerns with how structure is not only syntactic but ontological, and how meaning is designed within a cluster of relations regarding grammatical, cultural and multimodal realms.

Discomfort with grammatical structure was a recurring theme as well. Some participants [P14, P22, and P26] emphasized difficulties with writing consistent ideas or organizing their thoughts clearly in English. This speaks to implicit internal relations, as they struggle with structuring coherent and connected discourse in a second language, which reveals personal and cultural relationship with writing. In addition, genre awareness and design also surfaced their perceptions about structure, especially in these excerpts:

> Participant 14: It's terrible and I don't feel confident to write consistent ideas. I just started writing in a more serious way when I attended English Literature classes.
> Participant 22: My experience isn't good, I've always found writing hard because most of the words don't sound as they're spelled. I normally write some texts on the internet, I try to copy what the teacher says in class or in exams.
> Participant 26: Overall, I'm not the best writer, I don't often write, and the lack of practice translates to how well I'm able to transcribe my thoughts (not so well compared to my other language faculties). I only write in English while chatting with some friends, so I am mostly used to informal written speech. Also when my college professors ask me to.

In the excerpts, it is possible to notice a high presence of insecurity and discomfort towards writing in English in general, and specifically in terms of academic writing. P1 pointed to feeling more comfortable writing certain genres in English than in Portuguese, suggesting a functional understanding of structure as genre-based design. Likewise, P10 emphasized how writing helps to "think better in English", pointing to how structural patterns support meaning-making in a new language framework. In sum, participants were navigating structure as a system of meaning relations, trying to reconcile personal expression with language, cultural, and academic norms.

Eventually, the participants revealed concerns with structure in the AWE Systems used during the intervention. The lack of clarity in feedback was a central element in describing the interaction with the AWE systems, especially regarding Write & Improve. Such a characteristic led most participants to perceive the experience with Grammarly easier or more fluid, as the design of the platform was reported to be more functional. Figure 21 brings the preferences of the participants in terms of the systems used in the intervention:

Figure 21 - The Experience with the AWE systems

If you had to choose one of the following platforms to revise a text, which one would you take?
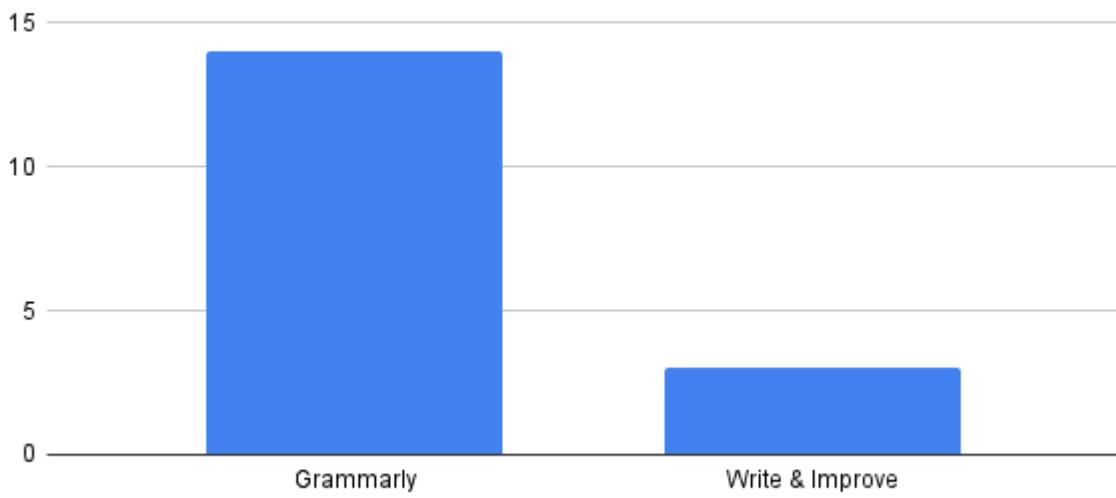
Source: Field research archive [questionnaire]

It is relevant to mention that choosing Grammarly as the preferred platform was not about the system itself. The design and the structure of the feedback was a key factor for the participants. In this regard, some participants [especially P7 and P14] described the feedback provided by Write & Improve as vague, especially because it is only about highlighting the text submitted in yellow without explaining why or how to revise:

> Participant 7: I don't think the platform is that easy to use, but it is not the most complicated out there. I didn't get a lot of feedback, but it was meaningful because my text had some errors. I like the idea of having small tasks that I can do to improve my writing skills. That was my favorite part of the platform!
>
> Participant 14: The platform didn't give me many suggestions. It highlighted some lines of one of the paragraphs but did not specify the changes that could be made. I don't know if I did it the right way, I was a little confused.

This reflects a breakdown in the explicit and implicit relations of structure (Cope; Kalantzis, 2020), especially in terms of design and affordances. When users cannot decode the logic behind the corrections provided by the systems, the coherence of meaning-making is occasionally disrupted. Flagrantly, participants reported the feedback from Grammarly as more assertive and intuitive than the one provided by Write & Improve.

Furthermore, some participants considered the AWE systems to have overly complex interfaces [P3, P4, and P5]. These participants described the platforms as having busy or non-intuitive design, which prevents users from interacting meaningfully with their writing.

This points to issues in the design and positioning of meaning. If they consider the interface disorganized, the system eventually fails to support the users in designing their texts.

Some participants pointed to expecting more actionable feedback [P5 and P7], as they wanted suggestions that helped them understand structural relations in their writing, e.g., coherence, cohesion, and transitions. Instead, some felt that the systems focused too much on surface-level errors, which led to missing deeper structural patterns. This can be affirmed in terms of Write & Improve, which is totally free for users. However, the free version of Grammarly is focused on surface-level errors and mistakes, while the paid version advances in terms of tone suggestions, for instance.

Overall, the participants revealed that structure is a central concern both in writing and in the use of AWE systems. They seem to grapple with the need to construct coherent and meaningful texts within unfamiliar language contexts. Additionally, they expected AWE systems to scaffold the process by making structural relations more explicit. However, when these systems, such as Write & Improve, fail to clarify the logic behind their feedback or present too much unorganized information, they undermine rather than enhance the structuring process of meaning-making. This indicates a critical need for pedagogical and technological design that makes the ontological relations of structure more transparent to the users.

4.6.4 Interest

Based on the responses and the conception of interest as a function that refers to the emotions, the social impulses, and the reasoning that motivate meaning-making (Cope; Kalantzis (2020), it was possible to identify several recurrent patterns. Such patterns illuminated the personal, affective, and social investments that participants bring into their English writing practices and their engagement with the AWE systems. Many participants associated writing in English with a cluster of insecurity, frustration, and satisfaction. Emotions such as anxiety and discouragement emerged frequently in participants who feel underprepared or limited in their abilities [P2, P13, P14, and P22].

This is in line with the understanding of interest as connected to deeper social meanings. Likewise, meaning-making through writing is not neutral but emotionally charged. For instance, the fear of making mistakes and the distress at knowing a word orally but failing to spell it correctly show how emotional investments shape writing experiences [P2 and P18]. Conversely, some participants expressed feelings of enjoyment, fulfillment, and

pride [P5, P15, and P20], suggesting that English writing can be a space for personal growth and self-affirmation.

Several participants tied their writing practices to identity and social aspirations, pointing to the social impulse behind meaning-making. P1, for example, framed English writing as a liberating yet limiting mode of expression, reflecting a negotiation between linguistic constraints and personal agency. For others, such as P12, writing in English is deeply embedded in creative practices like preparing Dungeons and Dragons sessions, while for P15, it is concerned with online self-expression through journaling on X [Formerly Twitter]. In these instances, writing is a medium through which participants explore and perform identities, whether as gamers, amateur writers, or aspiring educators.

Moreover, some participants write with the explicit goal of becoming better educators or professionals, suggesting that their interest is also concerned with imagined futures and social roles (Cope; Kalantzis, 2000). P5, P9, and P20 highlighted how the study of the English language and writing are intertwined with career ambitions, indicating that writing is both a tool and a symbolic enactment of becoming a teacher, a communicator, or a cosmopolitan citizen.

The reasoning dimension of interest was flagrant in how participants articulate their engagement with English writing as a process of cognitive effort, strategic practice, and learning. P18 and P25 emphasized metacognitive awareness, pointing to their reflections on how they learn and how writing fits into their journey. P18, for example, discussed the relevance of understanding the "science of learning a language", and P25 highlighted the value of structured tools such as mind mapping for organizing thoughts. These examples show how reasoning is not merely about intellectual ability but about developing an intentional and reflective stance towards writing and language learning.

The integration of the AWE systems [Write & Improve / Grammarly] also revealed much about the interests in writing coming from the participants. Some of them found the systems helpful but initially unintuitive [P1, P4, and P5], which suggests that interest is conditioned not only by affect and social factors, but also by usability and accessibility. P3 and P4 considered the feedback as relevant and motivational, aligning with their internal drive to improve, which could represent a reflection of reasoning and goal orientation. Others hesitated to fully embrace the tool due to unclear or overwhelming feedback, suggesting a misalignment between their cognitive needs and the design of the systems. In these instances, the function of interest was disrupted, as learners struggled to make meaningful use without clearer affordances.

Although less explicit, the rhetorical function of interest also surfaced the narratives (Cope; Kalantzis, 2020). Participants described their struggles not only with grammar or vocabulary, but with organizing and expressing coherent ideas [P14], choosing the right words [P18], or achieving a consistent tone in writing [P26]. These concerns relate to the sensitivity of the participants to the rhetorical dimensions of writing, which reinforces that meaning is shaped by language form, structure, and the expectations of academic or social genres.

Some participants, especially P1, contrasted the difference perceived when performing writing in English and in Portuguese, suggesting a critical awareness of how language systems afford or constrain meaning-making. In this sense, the awareness of language rhetoric speaks to how participants navigate the formal and communicative demands of writing, often attempting to balance clarity, correctness, and expressiveness.

Finally, many participants described writing as a bodily and temporal activity, as they write in the morning [P12], when they have tests [P3], or as part of daily routine [P5, P15, and P18]. These embodied practices show how writing is not only a cognitive or affective act but also embedded in social dynamics. Therefore, the act of writing is not abstract, as it is felt in the body, structured by time, shaped by the social context, and performed under affective charge.

4.6.5 Context

Based on the meaning function of context (Cope; Kalantzis, 2020), the narratives about English writing experiences and the use of the AWE systems revealed a set of recurrent patterns in how context functions materially and symbolically across such reports. Frequently, the concerns and reflections align with the meaning functions of likeness, directedness, and abstraction (Kalantzis; Cope, 2020), and how these elements locate meaning in personal, educational, and technological contexts.

Several participants referred to their life experiences and emotional states as they wrote in English. This manifested as likeness, a resemblance between their self-perception and the symbolic experience of using English for writing (Cope; Kalantzis, 2020). For example, P1 expressed a paradoxical relationship, calling writing in English "limiting but free," suggesting that meaning emerges from a tension between structure [language limitations] and self-expression [genre familiarity]. Similarly, P12 invoked likeness through their informal writing rituals, making meaning personally resonant and grounded in creative writing, outside formal academic settings, as in these excerpts:

> Participant 1: It's a limiting but free experience. I know the English language has its limitations about form Brazilian Portuguese assemblies and even vocabulary. It lacks words to describe most of the reality and human experience being in the world we are now. But I feel more comfortable writing genres in English more than in Portuguese.
>
> Participant 12: My experience is awful because I have a type of GCD and I often have to rewrite things a thousand times trying to get it right, whatever that means at the moment. I write a lot, either for college work or for myself. I write my Dungeons and Dragons session prep in the morning, but sometimes I write at night. I also write homebrew content (again for my DnD), but I do so sporadically.

As reported, writing in English provides challenges to the participants, but it is also liberating when it is performed through creative experience. In this view, writing in English is not merely language output but it is entangled with personal narratives, frustrations, and satisfaction. P15 and P18 echoed this perspective when they framed English writing as a mental exercise or emotional release, even when the process is frustrating. In this sense, meaning is located in likeness, that is, the way writing resembles or aligns with who they are or aspire to be (Cope; Kalantzis, 2020), and this shapes their engagement with writing.

Many participants connected their writing practices to directed, goal-oriented contexts, such as academic requirements, exams, assignments, or future career preparation. This reflects directedness, that is, the semiotic function in which signs point to specific referents or functions (Cope; Kalantzis, 2020). For instance, P10 stated that his writing experience is only related to university tasks, illustrating meaning shaped by institutional demands. Similarly, P22 emphasized copying what the professor says in class or preparing for exams, showing how the context of academic evaluation directs her writing experience.

Such a directedness was also evident in the engagement with the AWE systems used in the intervention. Participants frequently described the feedback from Write & Improve as confusing or not intuitive, which shows a disconnection between the feedback functions and their expectations for interpretable guidance. For instance, P1 critiqued the lack of transparency in the suggestions given by the platform, expressing discomfort due to unclear cues.

Another layer of meaning emerged from the abstraction function, where participants used writing to symbolically represent their progress, identity, and aspirations (Cope; Kalantzis, 2020). In this sense, writing becomes an abstract act of academic legitimacy or personal improvement, especially for those who view English as an opportunity to transcend in their professional journey as well as a way of self-realization [P5, P12, and P25]. However,

this abstraction is not only about grammar or vocabulary, but also about constructing an identity as a capable and evolving English user.

The use of the AWE systems can also be seen as participation in an abstracted-symbolic system of assessment and progress. When participants reported valuing the level-based feedback or considering future use of the platforms despite initial confusion, they were engaging with the symbolic legitimacy of technology in education. However, for meaningful abstraction to occur, the feedback must be interpretable, which represents a concern voiced by multiple participants [P1, P3, P4, and P5], who pointed to the need for clearer explanations or user-friendly design.

Cope and Kalantzis (2020) emphasize that context arises not only from surroundings but also from participation, which projects the purposes and uses that frame meaning-making. For the participants, context is shaped by the classroom, personal aspirations, informal digital spaces, and affective dimensions of learning. For example, writing for Dungeons and Dragons, X [Formerly Twitter], or journaling [P12, P15, and P21] are contexts where meaning is co-created with broader social or recreational communities, expanding the function of writing beyond the classroom.

In contrast, when the context is narrowly instrumental or academically required [P10, P13, and P24], the meaning of writing may be reduced to a performative or reluctant act, limiting deeper engagement. This illustrates how different participation roles, such as active creator, passive recipient, and reluctant performer, inflect the meaning function of context, either enriching or narrowing the potential of engagement.

The function of context, whether grounded in emotional resonance, practical necessity, or symbolic advancement, plays a critical role in how learners experience writing in English and the use of AWE systems. This reinforces the idea that context is not static but dynamic, as it is constantly reshaped through the material and symbolic practices of meaning-making, as argued by Cope and Kalantzis (2020).

4.7 Data Discussion

All things considered, the concerns regarding writing in English and using the AWE systems reflected a dynamic interplay of emotional, social, and cognitive interests. The meaning-making practices were guided by internal motivations, aspirations for identity and social roles, embodied habits, and critical awareness of language. These recurring patterns exemplify how the function of interest is a core driver of meaning, shaping how learners engage with English writing in ways that go beyond the mechanics of grammar or syntax.

Figure 22 brings an outline of the results and sets the overall connection of the practices implemented during the teaching intervention with the meaning-making functions:

Figure 22 - Outline of the Results
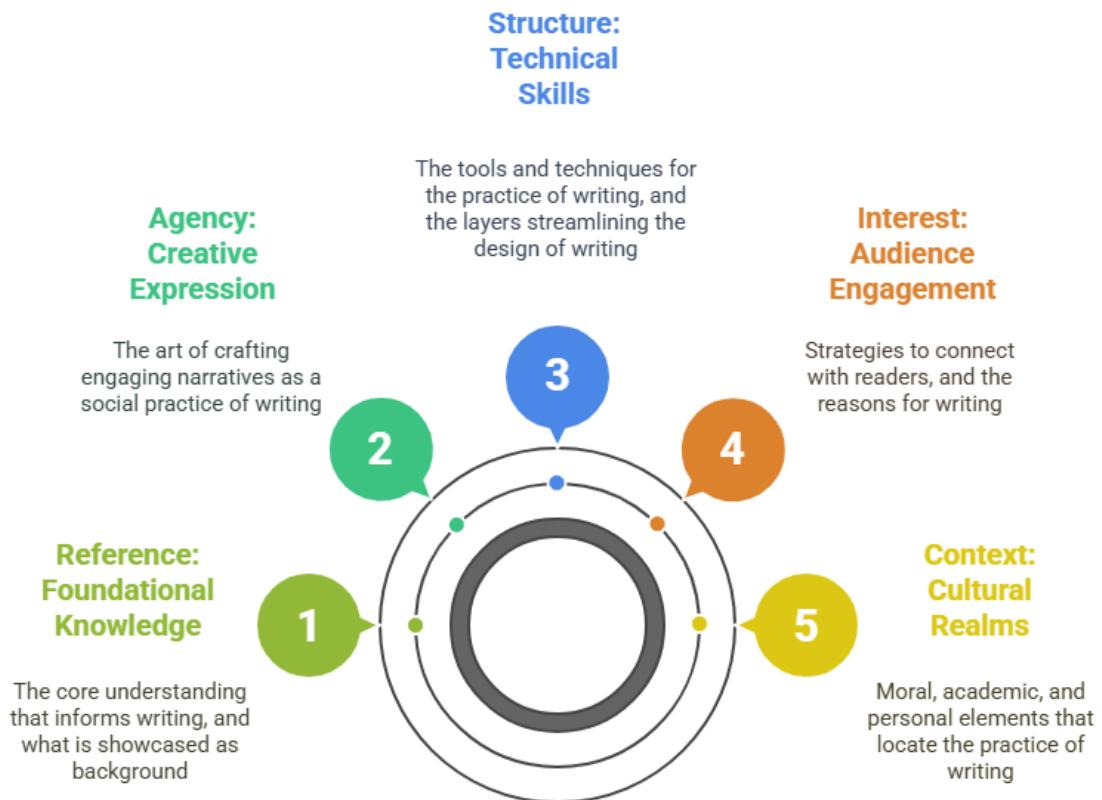
Source: Created through artificial intelligence[10]

Considering the meaning-making function of reference in light of the narratives in the short-term papers about writing and the use of AWE systems of the participants, several foundational beliefs emerged that streamline their approaches to writing. They articulated clear ideas of what constitutes a competent writer, often highlighting realms such as clarity, creativity, and the ability to engage readers. When discussing proficiency, participants described it as a broad phenomenon ranging from basic sentence construction to the ability to tailor content for specific audiences and purposes. Their narratives also underscored the

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[10] NapkinAI. Create a map of writing practice according to the results found in the field, categorizing key elements into five distinct areas: reference, agency, structure, interest, and context. The results revealed the following patterns for each function: Reference [This category focused on the foundational knowledge and understanding that informs a writer's approach]; Agency [This category emphasized the writer's active role and self-awareness in the writing process]; Structure [This category highlighted the technical aspects of writing, including conventions, grammar, and organization]; Interest [This category spotted the writer's motivations, goals, and the impact of their writing]; and Context [This category considered the external factors that influence the writing process and the final product]. Napkin 2025 version on June 20th 2025. Artificial Intelligence. Accessed on: June 20th 2025.

importance of constructive feedback, emphasizing that helpful responses go beyond identifying errors to offering guidance that supports improvement. Furthermore, their reflections revealed shared understandings about effective writing practice, including consistent revision, exposure to diverse texts, and the use of tools such as AWE systems to scaffold their learning.

Drawing on the meaning-making function of agency, the narratives from the short-term papers, the class discussions, and the answers to the questionnaire reflected a sense of personal responsibility and active engagement of the participants in their writing development, particularly in how they interacted with the AWE systems. Many envisioned themselves as central agents in their learning, taking deliberate steps to interpret feedback and apply it meaningfully. Their reflections often pointed to an increasing self-awareness regarding their writing habits and challenges, which the AWE systems helped them identify and monitor. They also described various self-initiated strategies for improvement, such as revising multiple drafts, experimenting with new styles, and seeking supplementary resources, demonstrating a proactive orientation towards learning and viewing writing as a dynamic social practice rather than a solitary task.

Technical mastery of writing emerged as a key concern in the narratives, the questionnaire, and during the classes, especially referencing how the AWE systems supported their understanding of language conventions. Some participants described gaining greater clarity on writing rules, such as punctuation, capitalization, and syntax, mainly through second-round interactions with the automated feedback provided. Grammar improvement was another frequently mentioned benefit, as participants recognized patterns in their errors or mistakes, and learned how to correct them. Beyond sentence-level issues, they also discussed how the AWE systems encouraged them to think about structure more broadly, including paragraph organization, cohesion, and the overall design of their texts to effectively communicate their ideas.

The discussions and narratives about the experiences with writing and the use of AWE systems revealed how motivation and purpose shape their engagement with the writing process, which spots the meaning-making function of interest. The participants often described specific intentions behind their writing, whether to persuade, inform, or express personal ideas, and reflected on how these goals influence their writing choices. The use of AWE systems motivated them to consider the broader purpose of writing, helping them understand that writing serves multiple functions in academic, social, and personal contexts. Additionally, many participants expressed awareness of the potential results and impacts of

their writing, such as receiving better grades, gaining peer recognition, or influencing others' perspectives, which could further motivate them to refine their skills.

Considering the meaning-making function of context, both the narratives and the participation in the classroom highlighted how various contextual elements shape the writing experiences and interactions of the participants with the AWE systems. They described the environments in which they wrote, such as classrooms, homes, or digital spaces, noting how each setting influenced their focus and productivity. The types of devices they used, ranging from smartphones to laptops, were also constantly mentioned, with some participants emphasizing the ease or limitations certain technologies imposed on their writing practices. Furthermore, some participants reflected on the role of the communities they write for, including classmates, teachers, and online audiences, and how these social dynamics inform their tone, structure, and content choices. These contextual factors, woven through their stories, showed the multifaceted nature of writing in a digitally mediated world.

Finally, the results streamlined writing as a phenomenon flagrantly concerned with personal and cultural realms, as the participants often made meanings about their experiences with writing from a multifaceted landscape of life experiences. Drawing upon the interactions with the AWE systems, it was perceived that learning classical writing conventions is still relevant when performing writing practices, especially when grappling with human feedback and automated feedback. Overall, writing was prevalently displayed as a subjective social practice and a terrain of meaning-making movements.

5 THE SPOTLIGHTS WERE SWITCHED OFF: THE FINAL REMARKS

> *Socrates: Then consider what the process of liberation from these chains and the healing from this ignorance would be like, if something like this were to happen: when one of them is freed and suddenly compelled to stand up, turn his head, walk, and — lifting his eyes — look toward the light, he would feel pain from the glare and be unable to see the things whose shadows he had seen before. What do you think he would say if we told him that what he had seen before was all an illusion, but that now being closer to reality and turned toward more real things, he sees more truthfully? Or, putting it another way, if we were to point to each of the things passing before his eyes and ask him what each one is and force him to answer, don't you think he would be confused and believe that the objects he had seen earlier were more real than the ones being shown to him now? (Platão/Plato, 2015, p. 11-12, own translation).*

The epigraph for this final section brings a quote from The Allegory of the Cave (Platão/Plato, 2015). In this allegory, Socrates and Glaucon discuss a scenario of liberation from chains, and the coming-out of the cave symbolizes the process of looking at life through new lenses, or maybe more realistic and conscious lenses. Such a perspective is also present in Psychoanalysis, for instance, where the elements which underlie and construct our life ideologies are faced in an attempt to perceive what is latent in the streamline of life choices and social attitudes (Freud, 1914/1980; Freud, 2010). A similar approach was conceived for data analysis in this doctoral dissertation through the analogy of arenas of meaning-making, and this final section represents a wrap-up movement, as represented in Figure 23:

Figure 23 - Final Remarks

Source: Created through artificial intelligence[11]

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[11] Open AI. Create an image of an ancient Roman-like stadium emphasizing the performance stage with spotlights turned off symbolizing that an event just ended with a discourse cloud in the center with the

As designed in Figure 23, the representation of spotlights being switched off in the arena of meaning-making illustrates the movement of finishing this doctoral dissertation. Considering a qualitative approach, it is relevant to mention that the remarks pointed herein are directly concerned with the social contexts. In this sense, the purpose of this section is to showcase the limitations of the study and how the research questions were answered, as well as to recall the results and attest the thesis statement.

One of the limitations faced during the investigation of the students' perceptions towards using AWE systems was the unstable internet connection, which for the whole semester was characterized as no institutional internet connection. Such an infrastructural constraint hindered the implementation of hands-on activities involving the AWE systems during the teaching intervention. As a result, opportunities for students to engage directly with these systems in class were limited, and the use was often assigned as homework tasks rather than integrated into guided classroom instruction. This limited exposure may have affected the depth and consistency of students' experiences, influencing the perceptions reported.

Another limitation of the study was the use of free versions of the AWE systems, in this case, Grammarly as there is no premium version of Write & Improve. While these versions provided basic functionalities, they lacked the more advanced features available in premium subscriptions. Briefly, the premium versions offer a broader range of affordances, including more detailed, pragmatic, and customizable feedback, which could support a more immersive and comprehensive writing practice. Access to these enhanced versions would have allowed students to interact more deeply with the AWE systems, providing richer data for exploring their perceptions and spot insightful findings regarding pedagogical impact.

The general aim of the research was to analyze the meanings undergraduate students make about using AWE systems and writing academically in English to understand their agency in such processes. Additionally, three research questions were elaborated to pave the answer for the general aim: How do the participants deal with their English learning process? What do the participants say about writing in English? What do the participants say about using AWE systems? These questions were answered through the analysis of the data collected through short-term papers, a questionnaire, as well as the assignments and the notes of the interactions during the intervention.

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expression "final remarks". People in the grandstand in the background are moving to leave the arena. There is also a windy flag with the expression "Arena of Meaning-Making". GPT-3.5 version on June 21st 2025. Artificial Intelligence. Accessed on: June 21st 2025.

The results showcased writing as a personally and culturally embedded activity, always performed in light of a diverse cluster of life experiences. Instead of being only a technical task, writing emerged as an arena of meaning-making, where individuals put their identities and ideologies on display. However, when engaging with AWE systems and large language models, the interactions also reinforced the relevance of mastering classical writing conventions, especially when responding to human and automated feedback. Altogether, writing was portrayed as a subjective endeavor, intertwining personal expression and social interpretation.

Some concerns related to English writing and the use of AWE systems reflected a complex interplay of emotional, cognitive, and social dimensions. Internal drives such as identity, aspirations for social roles, and critical awareness of language guided the engagement in meaning-making. Additionally, language conceptions and critical analysis also played a significant role across the narratives. These recurring patterns highlighted how context and interest are central in shaping how students approach writing in English, moving their focus beyond structural correctness toward meaningful communication.

When interpreting the narratives in light of the meaning-making function of reference, core beliefs about writing and writers became evident. Participants articulated coherent notions of what it means to be a competent writer, frequently emphasizing clarity, originality, and reader engagement. Their definitions of proficiency were expansive, encompassing not only the ability to form grammatically correct sentences but also the capacity to craft content tailored to varied audiences and communicative goals. They also stressed the value of meaningful feedback not only identifying mistakes but offering constructive guidance to foster growth. In this context, effective writing practices were consistently associated with strategies such as ongoing revision through the use of AWE systems together with peer-review interactions.

Recurrent patterns from the class discussions, the narratives from the short-term papers, and answers to the questionnaire pointed to the meaning-making function of agency, illuminating the active role participants assumed in shaping their writing development. Students frequently presented themselves as autonomous learners, engaging critically with automated feedback and adapting it to improve their texts. Their reflections indicated growing self-awareness about their strengths and areas for growth, often identifying specific patterns that AWE systems helped reveal. Many also described implementing self-directed strategies, such as rewriting multiple drafts, experimenting with different styles, or seeking

additional resources, which collectively reflected a dynamic and socially situated view of writing.

Technical aspects of writing were also brought into focus, particularly in relation to how AWE systems supported participants in grasping standard language conventions. Students frequently noted improvements in areas such as grammar, punctuation, and syntax, especially through iterative engagement with automated feedback. For many, the second or third round of feedback provided sharper insights into recurring errors and how to correct them. Beyond these micro-level skills, participants discussed developing a greater awareness of text organization, including paragraph structure, coherence, and how to design compositions to effectively convey meaning. This broadened their understanding of writing not only as correct form but as intentional construction.

Some narratives emphasized the function of interest in the writing process, showing how purpose and motivation actively influenced their engagement. Specific intentions, such as informing, persuading, or expressing personal views, shaped their writing decisions and overall orientation to tasks. AWE systems further supported this process by prompting students to consider the broader implications and roles of writing in different contexts. Motivational factors such as improving academic performance, gaining recognition from peers, or influencing others were frequently mentioned, revealing how purposeful writing experiences helped refine both their skills and their sense of authorship.

By taking the meaning-making function of context into account, the narratives and classroom engagement highlighted how environmental factors shaped their writing experiences with AWE systems. Writing settings, whether at home, in class, or online, were noted as impacting concentration, productivity, and access. The use of various digital devices, from mobile phones to laptops, introduced both advantages and constraints, which in turn influenced how students approached their tasks. Moreover, participants reflected on the expectations of different audiences such as peers and professors, and how these social relationships informed their rhetorical choices. These contextual dimensions highlighted the layered and hybrid nature of writing in digitally mediated learning environments.

In summary, writing was consistently represented as a socially constructed and culturally resonant process. Participants interpreted their experiences through a rich blend of personal, contextual, and cognitive perspectives. The interactions with the AWE systems affirmed the ongoing relevance of conventional writing skills while simultaneously illustrating how learners adapt and shape their writing practices through feedback.

Ultimately, writing was affirmed as a situated and subjective social practice, deeply concerned with identity, interaction, and ongoing meaning-making. Further studies could deepen the inquiry of the perceptions on the use of AWE systems for feedback by offering the use of premium versions of such systems. In addition, an expanded study could investigate more concerns and have varied narratives through the use of interviews with the participants, which was not performed during this doctoral research.

Based on the results and the analysis implemented, I reassert the thesis statement defended in the introduction as artificial intelligence, through the use of AWE systems, unveils and unbalances education, especially in terms of evaluation. These systems challenge not only professors and the educational institutions, but also the students as they are constantly required to perform agency and reveal their social interests, references and contexts in order to engage meaningfully with both human and automated feedback. Finally, as the narratives and the interactions revealed, writing was portrayed as an arena of meaning-making, which streamlines writing as a collective, subjective and ongoing social practice.

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APPENDIX 1 - THE COURSE SYLLABUS

SERVIÇO PÚBLICO FEDERAL
UNIVERSIDADE FEDERAL DE SERGIPE
PRÓ-REITORIA DE GRADUAÇÃO
CENTRO DE EDUCAÇÃO E CIÊNCIAS HUMANAS
DEPARTAMENTO DE LETRAS ESTRANGEIRAS
LICENCIATURA EM LETRAS-INGLÊS

COURSE DESIGNATION			
TITLE	Língua Inglesa V	**CODE**	LETR0702
PROFESSORES	Paulo Roberto Boa Sorte Silva Jefferson do Carmo Andrade Santos	**CREDITS**	4
DAY/TIME	Thursdays at 7 PM	**TERM**	2024.1
ROOM	Didática 6, sala 013		

COURSE DESCRIPTION

Sequência dos estudos em língua inglesa através dos atos de linguagens, dos aspectos culturais e das estruturas morfossintáticas, em nível intermediário. Desenvolvimento das quatro habilidades, priorizando a compreensão e a expressão escritas.

COURSE OBJECTIVES

This course is designed to develop English language communication skills in both oral and written aspects, drawing from the **book Teaching to Transgress: Education as the Practice of Freedom, by the North-American author bell hooks**. It also aims at reinforcing language studies related to written skills and morphosyntactic structures at an upper-intermediate level.

Our instructional approach will center on enabling an in-depth study of the English language with a focus on grammatical structures **of tense and aspect systems.** The course activities will be designed to practice the comprehension of multimodal texts on more complex everyday topics and engage in conversations about them. It will also expand the use of communication skills, prioritizing written comprehension and expression through the construction of paragraphs, topic sentences, punctuation, and peer review.

SKILLS AND ABILITIES

⇒ Upper-Intermediate communicative skills in English language.
⇒ Theory and practice of English language teaching.
⇒ Capacity for critical analysis and synthesis.
⇒ Knowledge of specific methodologies in the field and profession.
⇒ Time planning.
⇒ Decision making.
⇒ Flexibility to assume different roles in various contexts.
⇒ Ability to work in pairs, trios, and teams.
⇒ Ability to criticize and accept criticism.
⇒ Ability to make autonomous decisions.
⇒ Capacity for self-reflection.
⇒ Flexibility to adapt to changes in various situations.

COURSE CONTENT, ASSIGNMENTS AND TENTATIVE SCHEDULE

1) 07/11/24= Introducing/ Course presentation/ How well do we know each other?/ Getting to know AWE platforms
2) 07/18/24= class 1: chapter *Introduction*
3) 07/25/24= class 2: chapter *Language*
4) 08/01/24= class 3: chapter *Building a Teaching Community*
5) 08/08/24= no class
6) 08/15/24= class 4: chapter *Engaged Pedagogy*
7) 08/22/24= class 5: chapter *Embracing Change*
8) 08/29/24= oral test (group 1)

9) 09/05/24= oral test (group 2)
10) 09/12/24= written test
11) 09/19/24= class 6: chapter *Paulo Freire*
12) 09/26/24= group arrangement and final project instruction
13) 10/03/24= final presentation (group 1)
14) 10/10/24= Final presentation (group 2)
15) 10/17/24= results

Grammar topics to be covered: review of present tenses, future tenses, future perfect and future continuous, present perfect and present perfect continuous, adjective order, modals of speculation, past perfect and past continuous, will for present habits, past habits with be used to and get used to. *These grammar topics will be covered throughout the course mainly in relation to the chapters assigned for each class.*

Assignments: the activities will be done through the use of the free version of three platforms: 1) Write to Improve by Cambridge, 2) Grammarly and 3) ChatGPT. However, the assignments will be uploaded to SIGAA, inside the "*atividades*" tool in a PDF file consisting of the assignment itself and the screenshots of the process in the platforms.

ASSESSMENT

Unit I – Oral and Written tests
Unit II – Attendance, punctuality, task assignments, and participation in classes
Unit III – Final presentation

GENERAL EXPECTATIONS

This course will run as a combination of activities from different methodologies, that is, from a standpoint of an eclectic teaching, there will be a selection of techniques and practices together in the classroom. This means that the Communicative Language Teaching and the Post-Method Condition share the common denominator of choice.
- **ATTENDANCE**: I expect you to attend every class and to arrive promptly. Absence or tardiness may affect your grade on Unit II. Clearly illness is an exception; if you are sick let me know by email before the class and do not forget to follow the University procedures to explain your absence (a sick note).
- **TIMELINESS**: Please plan to arrive on time. Late or staggered arrivals are disruptive to the flow of the class and can compromise your learning and that of your classmates. Repeated tardiness will impact your grade.
- **ASSIGNMENTS**: I ask you to come to class with assignments completed, especially when it comes to reading bell hooks' book, since it will provide a basis for what we do together. Writing assignments and summaries will be submitted electronically via SIGAA, inside the *"atividades"* tool. Attention to deadlines since problems with Internet connections and computers availability are not valid.
- **MISSED CLASSES**: If you miss a class, you will need to get an update of the previous topics and assignments from your classmates or your professor. Having missed a class is not an excuse for not submitting assignments.
- **OFFICE HOURS**: Meetings with the professor are available if you are having difficulties with the subjects and/or assignments. Office hours must be scheduled in advance, and they are not available for reviewing subjects before tests or updating on missed classes.
- **ELECTRONIC ETIQUETTE**: Electronic devices, if used inappropriately in class, can be disruptive for others. Dictionary and pronunciation apps are helpful, and its use is encouraged during the classes (even on tests). Make sure your cell phones are ALWAYS on silent mode, do not answer your phone in the classroom, avoid texting and do not use earphones. Be respectful of your professor and classmates.

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APPENDIX 2 - THE WRITTEN EXAM

UNIVERSIDADE FEDERAL DE SERGIPE
CENTRO DE EDUCAÇÃO E CIÊNCIAS HUMANAS
DEPARTAMENTO DE LETRAS ESTRANGEIRAS
DISCIPLINA: *LÍNGUA INGLESA V*
PROFESSORES: *PAULO ROBERTO BOA SORTE SILVA*
JEFFERSON DO CARMO ANDRADE SANTOS

Full Name: _____ **Date**: December, 9th 2024

WRITTEN TEST

1. Based on the map that was built during one of our classes, choose 1 (one) of the key words/ideas below to write a paragraph. Attention to its structure, which must be composed of a topic sentence, two supporting sentences and one concluding sentence (3,0)
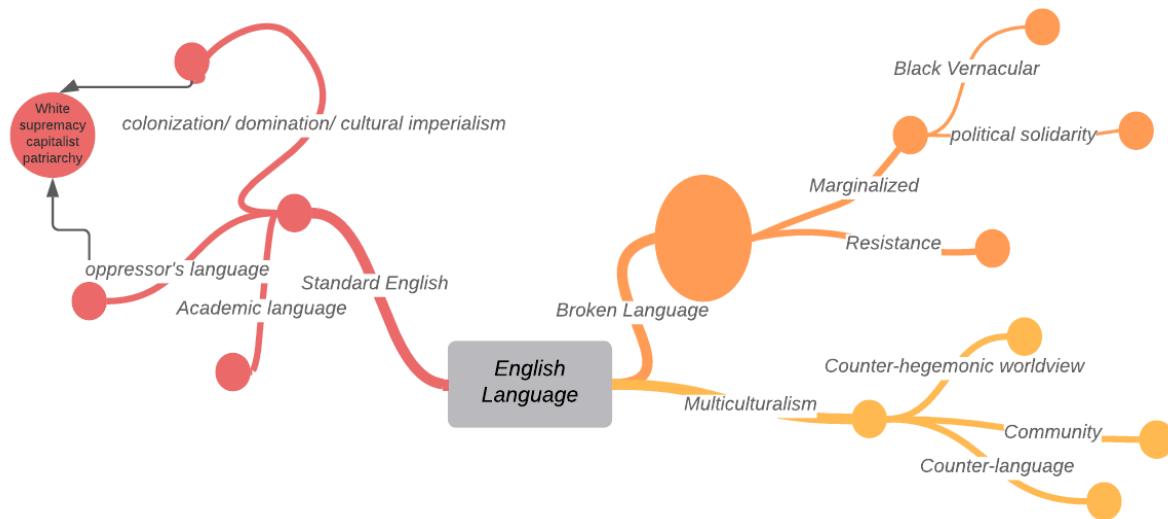
Keyword/idea chosen:

_____

Paragraph:

Topic Sentence:

_____

_____

_____

Supporting sentence 1:

_____

_____

_____

Supporting sentence 2:

_____

_____

Concluding sentence:

_____

_____

_____

2. Based on the paragraph below from Chapter 3 [Embracing Change], build your own map using key words/ideas. (3,0)

"Students taught me, too, that it is necessary to practice compassion in these new learning settings. I have not forgotten the day a student came to class and told me: 'We take your class. We learn to look at the world from a critical standpoint, one that considers race, sex, and class. And we can't enjoy life anymore'. Looking out over the class, across race, sexual preference, and ethnicity, I saw students nodding their heads. And I saw for the first time that there can be, and usually is, some degree of pain involved in giving up old ways of thinking and knowing and learning new approaches. I respect that pain. And I include recognition of it now when I teach, that is to say, I teach about shifting paradigms and talk about the discomfort it can cause. White students learning to think more critically about questions of race and racism may go home for the holidays and suddenly see their parents in a different light. They may recognize nonprogressive thinking, racism, and so on, and it may hurt them that new ways of knowing may create estrangement where there was none" (p. 42-43).

3. Choose 2 (two) sentences from the Chapter *"Introduction"* to provide examples and explain the systems of tense and aspect from them. Follow the example. (4,0/ 2,0 each)

Example:

"Though they did not define or articulate these practices in theoretical terms, <u>my teachers were enacting</u> a revolutionary pedagogy of resistance that was profoundly anticolonial" (p. 2).

Tense: past

Aspect: progressive or continuous

Explanation: imperfective or incomplete / somehow limited

Sentence 1:

_____

_____

_____

Tense: _____

Aspect: _____

Explanation:

_____

_____

Sentence 2:

_____

_____

_____

Tense:_____

Aspect: _____

Explanation:

_____

_____

APPENDIX 3 - THE ORAL TEST CRITERIA/RUBRIC

UNIVERSIDADE FEDERAL DE SERGIPE
CENTRO DE EDUCAÇÃO E CIÊNCIAS HUMANAS
DEPARTAMENTO DE LETRAS ESTRANGEIRAS
DISCIPLINA: LÍNGUA INGLESA V
PROFESSORES: PAULO ROBERTO BOA SORTE SILVA
JEFFERSON DO CARMO ANDRADE SANTOS

[August, 29th 2024 / September, 5th 2024]

Oral Assessment Criteria [Rubric]:
- Compensatory strategy (2,0)
- Appropriate response to a situation (2,0)
- Grammar (1,0)
- Intelligibility (3,0)
- Relationship between the cut/clip and bell hooks' ideas (2,0)

Prompts:

- I am going to play a bell hooks' TikTok clip, and I want you to connect the ideas she addresses on the video with the discussions in class so far.
- Could you mention some perspectives you have on the work with grammar and language during this semester?
- Do bell hooks' ideas help you analyze your attitude as a teacher or a future teacher?
- Do you want to add any comments?

APPENDIX 4 - ETHICAL REVIEW BOARD

	UNIVERSIDADE FEDERAL DE SERGIPE - UFS	

Continuação do Parecer: 5.745.006

Tipo Documento	Arquivo	Postagem	Autor	Situação
Informações Básicas do Projeto	PB_INFORMAÇÕES_BÁSICAS_DO_PROJETO_1914451.pdf	01/10/2022 12:44:11		Aceito
Parecer Anterior	CARTA_RESPOSTA_3.pdf	01/10/2022 12:43:17	JEFFERSON DO CARMO ANDRADE SANTOS	Aceito
TCLE / Termos de Assentimento / Justificativa de Ausência	TCLE_MODIFICADO_3.pdf	01/10/2022 12:42:54	JEFFERSON DO CARMO ANDRADE SANTOS	Aceito
Projeto Detalhado / Brochura Investigador	PROJETO_DOUTORADO_MODIFICADO_3.pdf	01/10/2022 12:42:11	JEFFERSON DO CARMO ANDRADE SANTOS	Aceito
Outros	INSTRUMENTOS.pdf	12/08/2022 19:46:05	JEFFERSON DO CARMO ANDRADE SANTOS	Aceito
Declaração de Instituição e Infraestrutura	TERMO_DE_ANUENCIA_MODIFICADO.pdf	04/04/2022 21:14:43	JEFFERSON DO CARMO ANDRADE SANTOS	Aceito
Folha de Rosto	FOLHA_DE_ROSTO_JEFFERSON.pdf	24/03/2022 17:50:02	JEFFERSON DO CARMO ANDRADE SANTOS	Aceito

Situação do Parecer:
Aprovado

Necessita Apreciação da CONEP:
Não

ARACAJU, 08 de Novembro de 2022

_____

Assinado por:
FRANCISCO DE ASSIS PEREIRA
(Coordenador(a))

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