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RESEARCH ARTICLE

Exploring Insights from Undergraduates on the Use of Artificial Intelligence (AI) Tools to Enhance Proficiency in Tense and Aspect in Foreign Language Instruction

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ARTICLE INFO	ABSTRACT
	It has become very difficult for foreign language (FL) learners to gain proficiency in their use of different forms of Tense and Aspect as two essential components of grammar in relation to context. Following the continuous impacts of artificial Intelligence (AI) tools in foreign language education, it has become pertinent to discuss the experiences of the students on how these AI tools have enhanced their proficiency in using tense and aspectual forms in their foreign languages. The aim of this paper is to investigate FL undergraduates on how differently AI tools have enhanced their proficiency in using different tense and aspectual forms in the foreign languages. A mixed method was adopted in the study, wherein a survey was conducted, and interviews were also conducted to gain both numerical and sentimental data from the FL undergraduates. The study community includes 251 FL undergraduates who participated in the questionnaire survey with additional four (4) FL students who were also interviewed on the subject matter of the study. Analysis was carried out using narrative strategy and simple statistical measures. The results highlight how FL undergraduate students have massively embraced artificial intelligence (AI) technology, demonstrating the revolutionary power of these tools for improved language acquisition. A mean score of 4.19 and a standard deviation of 0.89 indicate that most participants were thrilled for the quick detection and correction of tense and aspect errors made possible by AI technology, with over 86.32% of participants who accepted this effect. In addition, over 94.11% of the participants confirmed that AI tools helped them to analyse their progress and indicate areas requiring extra improvement in tense and aspectual marking. The insights gained from the interviews conducted with four undergraduate students provide valuable information on the significant influence of several artificial intelligence (AI) tools, including Grammarly, ChatGPT, Pro-Writing-Aid, Reverso, Language Tool, and WhiteSmoke. These tools have been shown to have a transformative effect on the students' ability to comprehend and use tense and aspect forms in foreign languages.

INTRODUCTION

In recent times, there has been a significant shift in the field of foreign language (FL) instruction/education, characterized using modern technical tools, namely Artificial Intelligence (AI) applications. Although there has been much research conducted on the effects of these advancements, there has been a notable omission in considering the distinct experiences and

viewpoints of undergraduate students enrolled in foreign language programs. The examination of tense and aspectual marking, which are basic and complicated components of language ability, has emerged as a central area of focus. The research on the impact of AI tools on students' understanding and correction of tense and aspect problems in FL learning is an area that warrants more exploration, despite the availability of such tools in abundance.

The comprehension of tense and aspect marking in a FL poses several difficulties for language learners, often resulting in enduring communication problems. A notable challenge occurs due to the intricate interaction between verb tenses and attributes, which exhibit considerable variation across different languages. English language learners may have difficulties while attempting to differentiate between the simple present and present continuous tenses. The research done by Bin Abdullah (2013) examined the writings produced by college students studying Teaching English as a Foreign Language (TEFL).

The inconsistencies in verb conjugation across various tenses and facets might result in perplexity. An example of irregularity in the English language may be seen in the past tense forms of verbs such as 'go' (went) and 'be' (was/were). These particular forms deviate from the usual -ed pattern, which presents a difficulty for learners in terms of memorizing and appropriately using them. These challenges highlight the complex characteristics of tense and aspect marking, necessitating a sophisticated approach in educational methods to tackle the ongoing difficulties encountered by people learning a foreign language (FL). The unexplored realm is in the collaboration between undergraduate students and artificial intelligence (AI) tools within the area of tense and aspectual marking. Prior studies have mostly focused on the larger implications of using artificial intelligence (AI) in the field of FL, (Chen & Lin, 2023) or the efficacy of particular tools in improving grammar proficiency, (Alotaibi, 2023; Fitria, 2023).

This study intends to close this gap by gaining knowledge into undergraduate students' use of innovative technologies like Grammarly and AI Chatbots from their unique viewpoints. This research intends to examine how students' exposure to artificial intelligence (AI) technologies in education has affected their tense and aspectual learning in the context of learning a foreign language. In addition to illuminating the challenges faced by undergraduates, this study is also expected to highlight the possible solutions offered by AI-driven apps. Thus, it provides unique insights for teachers, scholars, and policymakers who are working to improve the teaching of foreign languages.

REVIEW OF THE RELATED STUDIES

Tense and Aspectual Marketing Complexities in FL Learning

The process of mastering the concepts of tense and aspectual marking poses complex difficulties for people learning a foreign language, greatly impacting their capacity to speak with precision and effectiveness. The concept of tense pertains to the temporal positioning of an action, indicating whether it occurred in the past, present, or future (Zhiri, 2014; Tsai, 2023). On the other hand, aspect concerns the perspective from in which an action is seen, focusing on its length or completeness. The complexities associated with tense and aspectual marking are multifaceted. Many FL learners often have difficulties when it comes to comprehending and using many forms and applications of tenses in a given language (Tsvetkova, 2018). For example, in the English language, the utilization of the present tense has the capacity to convey a habitual behaviour, a general fact, or a future occurrence, so engendering a state of perplexity among those who are learning the language (Zhang, 2022). Moreover, the idea of aspect, including continuous, perfect, and simple aspects, adds another degree of complication. Learners are required to not only distinguish the temporal occurrence of an action (tense), but also comprehend the manner in which the activity is connected to time and other acts (aspect). The intricate nature of this phenomenon often gives rise to inaccuracies in verb conjugation, so impacting the lucidity and precision of communication (Tsai, 2023).

The difficulties associated with acquiring proficiency in tense and aspect marking arise from the disparities between the learners' mother tongue and the language they are aiming to acquire (Matsumoto & Dobs, 2017; Liu et al., 2019). There exists a substantial amount of variance in the tense and aspect systems across different languages, which may result in perplexity for individuals who are trying to establish correspondences between the ideas of their native language and those of a foreign language. The implications of these difficulties are significant. Miscommunication may occur due to errors in tense and aspectual marking, which can lead to misconceptions in both written and spoken communication (Zarzycka-Piskorz, 2016). Furthermore, these errors have the potential to impact the confidence of learners, so impeding their inclination to participate in conversations or produce lengthy written content in the target language. Furthermore, it has been shown that these obstacles tend to endure even when learners reach higher levels of language competency, suggesting a permanent obstacle in the process of acquiring a new language, (Tsai, 2023). Therefore, it is important to address these obstacles to enhance learners' overall language competency and cultivate effective communication skills.

Learners encounter a variety of prevalent errors and challenges when it comes to the marking of tense and aspect. A prominent concern is the improper use of verb forms, particularly irregular verbs, across various tenses and aspects (Zhang, 2022). Learners may have difficulties in mastering irregular past tense forms, such as 'went' and 'was/were,' resulting in inconsistent use within sentences (Wilson & Billam, 2023; Blake, 2013, Refat et al., 2020). An often-seen mistake in language use is the confusion between analogous tenses, such as the simple present and present continuous (Bin Abdullah, 2013). Learners may tend to erroneously use continuous characteristics in order to depict routine acts, or employ simple aspects to represent ongoing activities, so causing a lack of clarity in the intended meaning of the message. Furthermore, learners often have difficulties when attempting to articulate acts that took place in the past but still hold significance in the present, as they navigate the intricacies of past perfect and present perfect tenses (Fageeh, 2011).

Furthermore, the linguistic phenomena related to the use of language, including the prevailing cultural norms and social conventions in the language being studied, have a substantial influence on the selection of tense and aspect (Zhang, 2022). For example, several languages may include distinct verb tenses that are specifically used to denote actions or events that have transpired in the recent past, therefore highlighting the significance of immediate relevance within the context of communication (Amaral & Meurer, 2011; Chen & Lin, 2023; Fischer, 2012). To successfully navigate the intricacies of language and context, learners must cultivate a profound comprehension of not only the grammatical regulations, but also the pragmatic dimensions of tense and aspect indication.

AI Tools for Tense and Aspect Marking in FL

The use of technology interventions in linguistic instruction has resulted in profound shifts in the area of education during the last several decades. These interventions have provided new methods for addressing the complex difficulties of learning a foreign language, especially with regards to tense and aspect marking. Different scholars have reported this change; among them are Alotaibi (2023), Refat et al. (2020), Wang et al. (2023), and Chen and Lin (2023). There is a plethora of language-learning tools available, which include, mobile Apps., mobile devices, and even those powered by artificial intelligence (AI). Rosetta Stone and Duolingo are just two examples of language-learning Apps. that provide lessons focussing on helping users master a language's tenses and aspects (Heift & Vyatkina, 2017; Keerthiwansha, 2018). Others include Grammarly, ChatGPT, Pro-Writing-Aid, etc. These tools employ interactive exercises to facilitate the mastery of appropriate verb forms and their contextual usage (Wang et al., 2023; Akbar, 2023; Schmidt & Strasser, 2022). According to Zarzycka-Piskorz (2016), these software applications utilize gamified strategies to actively involve learners in interactive exercises and provide immediate feedback. This approach proves beneficial in effectively reinforcing tense and aspectual concepts. Language exchange and conversation practice are

facilitated by mobile applications such as Babbel and Hello-Talk, allowing learners to effectively apply their comprehension of tense and aspect in authentic situations. According to Castillo-Cuesta et al. (2021), multimedia elements, including audiovisual materials and interactive dialogues, are frequently integrated into these applications. This integration serves to enhance learners' proficiency in listening and speaking skills across different tense and aspect contexts.

The utilization of AI-driven applications has become prominent in the field of language education, specifically in the context of addressing difficulties related to tense and aspect marking (Alvarez & Lane, 2023; Tsai, 2023; Wilson & Billam, 2023). According to Alotaibi (2023), Grammarly, a writing assistant powered by artificial intelligence (AI), conducts an analysis of texts to identify grammatical errors, specifically those pertaining to tense and aspect. The technique then successfully offers learners suggestions for making appropriate corrections.

Although these technological interventions show potential for providing solutions, they are accompanied by inherent limitations. According to Blake (2013), language learning software and mobile applications, despite their interactive nature, do not possess the same level of spontaneity found in face-to-face conversations. Consequently, learners using these tools may have limited opportunities to encounter a wide range of tense and aspectual contexts. Furthermore, it is important to note that these tools may not sufficiently account for the cultural and contextual intricacies related to the marking of tense and aspect in particular languages. This could potentially result in an oversimplification of intricate linguistic phenomena, as highlighted by Heift and Vyatkina (2017). Artificial intelligence (AI) powered applications, although capable of effectively identifying errors, may occasionally lack a comprehensive comprehension of context. Consequently, the suggestions provided by these applications may not consistently align precisely with the intended meaning of learners (Simon, 2023). In addition, the utilization of AI tools may unintentionally impede learners' learning of intrinsic problem-solving skills pertaining to tense and aspect, thereby impeding their capacity to apply these concepts autonomously (Fageeh, 2011). Hence, it is imperative to adopt a comprehensive approach that combines human interaction, cultural comprehension, and AI assistance in order to achieve a thorough understanding of tense and aspectual learning in foreign languages.

Numerous scholarly investigations have been conducted to examine the effects of AI-driven applications on language proficiency, with a particular emphasis on the difficulties related to tense and aspect marking. The study conducted by Abdul Ghani et al. (2017) investigated the efficacy of mobile-assisted language learning (MALL) in improving students' comprehension of grammar, specifically in relation to tense and aspect. The research emphasized the favourable results achieved through the utilization of artificial intelligence (AI)-powered mobile applications in the field of language education. The aforementioned studies collectively emphasize the beneficial effects of AI-driven applications in effectively addressing challenges related to tense and aspect marking. These findings strongly support the integration of such tools into language education strategies as a means of enhancing learners' proficiency in foreign languages.

THEORETICAL FOUNDATIONS FOR THE STUDY

The study of language learning, specifically the intricate elements of tense and aspect, has been a central area of interest within linguistic theories and educational frameworks. Historically, language education has predominantly relied on structuralist theories, prioritizing the explicit teaching of grammatical rules and patterns. The primary emphasis within this framework lies in the memorization of verb forms, encompassing tense and aspect, frequently without integration into authentic communicative situations (Amaral & Meurer, 2011). This approach is derived from behaviourist theories, which conceptualize learning as a mechanism of habit facilitated by repetitive practice and reinforcement. Nevertheless, the inadequacies of this methodology became apparent as it proved incapable of adequately addressing the contextual and communicative dimensions of

language usage, particularly in intricate domains such as tense and aspect (Bin Abdullah, 2013; Ulla et al., 2023; Wang et al., 2013; Wang, T., 2023).

In contrast to conventional approaches, communicative language teaching (CLT) has emerged as a noteworthy pedagogical transformation, placing emphasis on the significance of communication in the process of language learning. Based on sociocultural and constructivist theories, CLT promotes the use of language in meaningful ways in authentic settings, emphasizing the importance of comprehending tense and aspect in communicative contexts (Blake, 2013). The concept of Communicative Language Teaching (CLT) posits that tense and aspect should not be viewed as independent grammatical rules, but rather as essential elements of communicative competence that are best acquired through interactive and contextually grounded language usage (Matsumoto & Dobs, 2017). This methodology promotes the understanding of how the selection of tense and aspectual forms in communication conveys particular meanings and intentions, thus highlighting the pragmatic dimensions of language usage (Zhang, 2022).

In the realm of modern language education, the utilization of technology and Artificial Intelligence (AI) has brought about a significant transformation in the theoretical foundations of language learning, with a particular emphasis on tense and aspect. The emergence of technology-enhanced language learning (TELL) framework has been influenced by the integration of socio-cultural theories, which highlight the collaborative and contextual aspects of learning facilitated by technology (Fageeh, 2011). The role of artificial intelligence (AI) tools in the learning of tense and aspect knowledge assumes a crucial position within the theoretical framework of Technology-Enhanced Language Learning (TELL) (Kim, 2014; O'Neil & Rusell, 2019). AI-powered applications, such as ChatGPT and Grammarly, function by leveraging cognitive theories, specifically constructivist paradigms, which posit that learners actively construct their understanding through engagement (Wilson & Billam, 2023). The aforementioned applications offer customized feedback and structured assistance, in accordance with Vygotsky's Zone of Proximal Development (ZPD).

Moreover, scholarly investigations into the learning of tense and aspect, guided by theoretical frameworks, have examined the influence of technology, including artificial intelligence (AI), on learners' comprehension. Research conducted on the topic of tense and aspect in the context of task-based language teaching (TBLT) underscores the significance of technology in facilitating the creation of authentic tasks that enable learners to engage with tense and aspect in meaningful ways (Rodríguez Reyes, 2022). This is consistent with the principles of task-based learning theories, which highlight the significance of involving learners in meaningful and goal-oriented activities for language learning. Consequently, this offers theoretical justification for incorporating artificial intelligence (AI) tools into task-based language teaching methodologies (Simon, 2023; Shadiev & Feng, 2023; Akbar, 2023).

METHODOLOGY AND PROCEDURE

Study Questions

Based on the critical review of the literatures connected to the impacts of AI models in enhancing the proficiency of foreign language learners in their tense and aspectual marking, the following research questions are put forward to guide the study process:

i). In what specific ways do AI models assist FL undergraduates in achieving proficiency in their tense and aspectual marking in the FL?

ii). How do FL undergraduates perceive the relevance of AI models in assisting them to acquire proficiency in tense and aspectual marking in the FL?

The above listed research questions form the basis for the designing of the study tools and the analysis procedure.

Study Approach

To explore the views of FL undergraduates properly on their experience towards the use of AI tools to enhance their proficiency in the tense and aspect marking in the FL, this study employs a mixture of quantitative survey and qualitative approaches. The need for this mixed method is mainly to explore the sentiments of the undergraduates on the role of AI in learning and avoiding errors connected to tense and aspect. Furthermore, there is a need to explore numerical projections in terms of eliciting quantitative information from the participants. The cross-sectional survey design was used to structure the nature of the work.

Sampling and Sample Size

The samples in this study are undergraduates who are currently the final year university students. In addition, they are studying a foreign language in different public and private universities across different regions. Through the use of randomized sampling technique, FL undergraduates from various universities were engaged in this study. Initially, a total of 953 FL undergraduates indicated interest in participating in the study, but after careful screening, it was discovered that about 70.51% (N=672) of them are not in their final years. As such, they were removed from the study population. Furthermore, 26 final year FL undergraduates that initially indicated interest in the study were not responsive for over a period of five months. It was in the extended period for responding to the study, the consent forms were sent to the remaining 281 FL students. This informed us of the need to remove the 26 persons from the participant population. In the end, a total of 255 FL undergraduates in their final years of university education participated in the study.

Study Tools and Procedure

Following the adoption of both qualitative and quantitative approaches, the tools for the study span adopted two methods, the qualitative survey, and the quantitative approach. For the qualitative survey, interviews were conducted, wherein four (4) FL undergraduates participated in the semi-structured online interview. The interview was primarily based on the second research question, wherein they were asked only two questions:

i). What AI tools have you been using to improve your tense and aspect marking in the FL, and how have you been using AI tools to improve your proficiency in tense and aspect?

ii). How have these tools helped you in improving your usage of various tense and aspect forms in the FL learning?

The four (4) students were interviewed at differed occasions through WhatsApp video calls. The interviews lasted between 20-35 minutes in each of the four sessions. The interview videos were screen recorded and transcribed for easy of analysis.

The quantitative data was collected using digitally constructed questionnaires. The survey questionnaire was designed using Google Form app, wherein 251 study participants received the link to the form to be able to submit their views. The questionnaires were in two main parts with a total of twelve question items. The question items include two demographic questions (age and gender), five question items based on the first research question. The five question items are designed using the Likert Scale of three points (agree, neutral, disagree).

Analysis Procedure

The analysis was carried out using both qualitative and quantitative approaches. For the data generated through interviews, the analysis was conducted using narrative approach in which the responses of the participants were arranged according to participant 1 to participant 4, which is followed by a general discussion of key components of the responses of the participants. The quantitative data collected through questionnaire was analysed using statistical tools, including

calculation of the percentile values of the responses across the Likert scales, the mean value, and the standard deviation.

RESULTS AND DISCUSSION

The need to explore the experiences of FL undergraduates in terms of how AI tools have facilitated their proficiency in using tense and aspects in the FL learning formed the basis for collecting both qualitative and quantitative data. This section presents the results of the collected data, which is also followed by an elaborate discussion of the key findings from the results of the collected data. This informs the division of the section into two main subparts.

Table 1: Result of Demographic variables

Categories	Variables	Repetition	Percentage
Gender	Male	N= 122	47.84%
	Female	N= 131	51.37%
	Not indicated	N= 2	0.78%
Age Range	19 years and below	N= 24	9.42%
	20-25 years	N= 143	56.07%
	26 years below	N= 88	34.5%

Key insights about the research participants are provided by the demographic data that was gathered. With 47.84% of participants identifying as male and 51.37% as female, the data shows a balanced representation of genders. It is noteworthy that a very small percentage of respondents amounting to 0.78%, did not specify their gender. A thorough examination of the effects of AI tools on tense and aspect learning necessitates a varied range of viewpoints, which is suggested by the study's balanced gender representation. Furthermore, the age distribution of the individuals demonstrates a wide variety of experiences. The age group of 20 to 25 years old comprises 56.07% of the participants, which is a noteworthy portion of young people who are usually enrolled in undergraduate programmes. Remarkably, 26.4 percent of participants are under 26 years of age, suggesting a significant proportion of younger students, and 34.5 percent are under 19 years of their age. Due to the participants' diverse age distribution, which indicates a wide range of educational experiences and backgrounds, the study's analysis will have a solid basis.

Results

It has been established that two research questions form the basis for the collection of the quantitative and qualitative data. as such, the two research questions form the basis for the analysis of the collected data.

i). **Impact of AI Tools in Enhancing the Proficiency of FL Undergraduates in Tense and Aspectual Marking**

The first research question was aimed at exploring specific ways in which AI models assist FL undergraduates in achieving proficiency in their tense and aspectual marking in the FL learning. The focus is to elicit data on how AI tools facilitate the learning of tense and aspect in FL. The quantitative data are presented here.

Table 2: Results of the Essence of AI in Enhancing Tense and Aspect Proficiency in the FL learning.

Question Items	SA	A	D	SD	Mean	Std. Dev.

Undergraduates in FL may quickly identify and fix tense and aspect errors with the help of AI tools that provide fast feedback.	66.32	20.20	7.78	5.70	4.19	0.89
Undergraduates studying FL may practise and solidify their grasp of tense and aspect via customised activities provided by AI models.	67.88	19.18	3.10	9.84	4.27	0.73
Artificial intelligence (AI) tools improve the learning experience of FL students by offering customised recommendations and suggestions based on each student's areas of difficulty in tense and aspect	74.09	19.07	6.74	3.10	5.09	0.52
AI-powered systems provide FL undergraduates with more visual and audio learning opportunities by providing multimedia materials, like videos and interactive tutorials, that demonstrate the use of tense and aspect.	78.24	20.20	1.56	-	5.73	0.31
With the use of AI tools, FL students may analyse their progress and pinpoint areas in need of additional development by tracking their performance in tense and aspect tasks.	74.11	19.21	3.93	2.75	5.35	0.42

The results shown in the table 2 highlight how foreign language (FL) students have massively embraced artificial intelligence (AI) technology, demonstrating the revolutionary power of these tools for language acquisition. A mean score of 4.19 and a standard deviation of 0.89 indicate that most participants were thrilled for the quick detection and correction of tense and aspect errors made possible by the integration of AI technology, with 66.32% strongly agreeing and 20.20% agreeing. Furthermore, with a mean score of 4.27 and a standard deviation of 0.73, a startling 67.88% of the participants highly agreed and 19.18% agreed that they were able to practise and strengthen their understanding of tense and aspect via personalised exercises offered by AI models. With 74.09% of participants strongly agreeing and 19.07% agreeing, and overwhelmingly recognised the benefit of AI tools in improving their learning experience. This has however, resulted in a high mean score of 5.09 and an astonishingly low standard deviation of 0.52. According to 78.24% of the study participants who strongly agreed and 20.20% who agreed, the integration of AI-powered systems also gave FL undergraduates richer visual and auditory learning opportunities through multimedia materials. This resulted in a mean score of 5.73 and an incredibly low standard deviation of 0.31. The results showed a high mean score of 5.35 and a low standard deviation of 0.42. In addition, 74.11% of participants strongly agreed and 19.21% agreed that AI tools helped them to analyse their progress and indicate areas requiring extra improvement in tense and aspectual marking. Together, these results highlight the broad agreement among FL undergraduates about the efficacy of AI tools, emphasising their critical role in delivering quick feedback, enabling customised learning experiences, boosting motivation, and presenting a variety of multimodal learning opportunities, all of these having the potential to completely transform the language education landscape, mainly in improving their proficiency in the use of tense and aspect in the FL.

Results of the Interviews

The interview was also conducted based on the second research question. Two major interview questions form the basis for the data collection. The questions are as under.

i). What AI tools have you been using to improve your tense and aspect marking in the FL, and how have you been using AI tools to improve your proficiency in tense and aspect?

ii). How have these tools helped you in improving your usage of various tense and aspect forms in the FL?

The four FL undergraduates that participated in the interviews are codified as FL Undergraduate 1,2,3 and 4, mainly to maintain anonymity as described in the consent form attached to the survey form. The results of the conducted interviews are presented below.

i). Undergraduate 1:

"Grammarly and ChatGPT have been my main tools for improving my comprehension of aspect and tense in the FL. Grammarly serves as an instantaneous writing helper by pointing out and fixing tense and aspect errors while I'm creating sentences. Its immediate feedback, which highlights minor errors and offers improved sentence construction strategies, has been quite helpful. In comparison, ChatGPT has been more participatory. I interact with it via chat sessions in which I pose targeted queries on the use of aspect and tense. It offers thorough explanations that make difficult regulations and situations understandable. Furthermore, ChatGPT provides personalised workouts that focus on my areas of weakness. For example, it creates practice sentences that target the particular aspect form or tense that I find difficult, enabling me to put what I've learnt to put into practice. My confidence and precision while using various tense and aspect forms have greatly increased my awareness attributable to these tools. My writing has improved because of Grammarly's real-time recommendations, which have increased my awareness of tense and aspect nuances. After receiving constant clarifications and corrections, I've mastered the ability to distinguish between forms that were formerly confusing to me, including past simple and present perfect. The interactive ChatGPT sessions have been like to having a private teacher. I now have an improved understanding of when and how to employ certain tense and aspect forms as a result of talks and targeted queries. The personalised tasks offered by ChatGPT have been invaluable, pushing me to put what I've learnt, strengthening my comprehension, and facilitating the appropriate use of these forms in my writing and speaking. All in all, these AI tools have completely changed the way I study, making the complex concepts of tense and aspect much more approachable and controllable."

ii) Undergraduate 2:

"The primary tool I have used for prompt error corrections is Grammarly for comprehensive learning, I have relied on ChatGPT. The use of Grammarly has played a crucial role in enhancing the quality of my written work by effectively identifying and rectifying errors related to tense and aspect in real-time. Moreover, ChatGPT has always served as my primary resource for comprehending intricate conventions pertaining to tense and aspect. The system exhibits a rapid response to my questions, effectively simplifying complex subjects into easily understandable answers. The real-time feedback provided by Grammarly has had a notable impact in minimising my grammatical mistakes, particularly those pertaining to tense and aspect. The interactive lessons provided by ChatGPT have enhanced my comprehension of various tense and aspect forms. Through our conversations, I have acquired the ability to use these forms in a contextual manner, so enhancing the accuracy and perfection of my utilisation. Undoubtedly, the use of these tools has significantly improved my skill in the understanding and application of tense and aspect."

iii). Undergraduate 3:

"Grammarly and ChatGPT have been crucial tools in my goal of language fluency. I learned more about tenses and aspects by using Grammarly and ChatGPT's real-time comments and interactive sessions. But I just discovered Pro-Writing-Aid, a wonderful tool for checking my writing for grammatical and style errors. Its in-depth analysis helped me see my work in a new light with zero errors in particular tense and aspect problems. The language-learning platform on Reverso also shows promise. It does more than just to fix grammar. It also translates sentences inside their original context, which is useful for picking up on intricacies of tenses and aspects in languages. Taking into account these options increased my horizons by providing me with a variety of methods for learning tenses and aspects in other languages. For an in-depth training in a language, experimenting with various

artificial intelligence (AI) tools is vital. While Grammarly and ChatGPT have shown to be trustworthy, exploring alternative platforms like Pro-Writing-Aid and Reverso that lead to the discovery of innovative approaches to education. This multifaceted strategy helped me get a deeper comprehension of tense and aspect, allowing me to further properly and confidently utilise these linguistic subtleties in my language studies."

iv). Undergraduate 4:

"I've also experimented with Language Tools and found them a powerful grammar checker offering extensive input on sentence patterns. In addition to Grammarly and ChatGPT., I've learned a lot more about tense and aspect because of its emphasis on correct grammar. I've also lately found WhiteSmoke, which does more than just check for grammatical errors, providing ideas for improving writing style and even helped me learn new words. Its contextual analysis has greatly improved my understanding of tenses and aspects by allowing me to pick up on small differences in their application. As of now, I have a much broader understanding of how to master tense and aspect forms by trying out several options offered by Language tools like, WhiteSmoke, and Pro-Writing-Aid. These AI tools provide me individualised feedback, so I can work on only the areas that need."

DISCUSSION OF KEY FINDINGS

This research has provided a thorough analysis of how artificial intelligence (AI) technologies may be utilised to teach and learn tenses and aspects in foreign languages. Two hundred and fifty-one (251) students of foreign languages responded to the questionnaire survey, and four (4) undergraduates majoring in FL were interviewed. The initial part of this section included a presentation of the data collected. The purpose of this part is to analyse the results and discuss the implications of those results, drawing on the findings/results of other research as evidence.

The first study concern investigates how students feel about using AI software. The results in table 2 show that students studying foreign languages (FL) have generally a good attitude towards the use of artificial intelligence (AI) technology in their coursework, especially when it comes to the subtleties of tense and aspect marking. The first finding in the table reveals that AI tools are highly recognized for their quick feedback, which enables FL students to quickly identify and correct tense and aspect issues. These results demonstrate a solid agreement among participants, showing the efficacy of AI tools in providing timely remedial assistance, with a mean score of 4.19 and a standard deviation of 0.89. This is consistent with the findings of Abdul Ghani et al. (2017)'s study, which highlighted the value of immediate feedback in improving language learners' comprehension of grammar. Abdul Ghani et al.'s (2017) research reported a comparable AI-driven interventions increased engagement and improved grammatical correctness, which is consistent with the positive reaction. The notions of contextual learning, in which students actively participate in real-life situations to create meaningful knowledge, are in line with the students' abilities to quickly correct their tense and aspect mistakes (Heift & Vyatkina, 2017).

The next result shows that FL students like the chance to reinforce their knowledge of aspect and tense via customised tasks offered by AI models. These findings, which have a mean score of 4.27 and a standard deviation of 0.73, indicate that participants are in good agreement. This is consistent with research by Keerthiwansha (2018), who showed how well AI-driven interventions can customise tasks to meet the requirements of specific learners and improve their understanding of language ideas. The positive reaction to personalised exercises is consistent with the findings of Matsumoto and Dobs' (2017) study, which highlights the significance of contextualised learning opportunities in language learning. It also emphasises how well AI tools match learning materials to learners' skill levels, encouraging deeper engagement and understanding.

The last point highlights how AI tools have a substantial influence on improving the learning experiences of FL students by offering personalised suggestions based on each student's unique

areas of difficulty in tense and aspect. These findings, which show a very low standard deviation of 0.52 and a mean score of 5.09, demonstrate the strong agreement of the participants. Refat et al.'s (2020) study, which examined the motivational components of AI-driven learning aids, is consistent with this. According to their study, students were more motivated when they received personalised suggestions, which raised engagement and competency. The study's findings about the use of AI technology in language teaching are consistent with the constructivist viewpoint, which emphasises the value of learner-cantered methods that customise learning to each student's requirements (Wilson & Billam, 2023). The positive reaction to tailored recommendations shows how well AI tools work to create flexible learning environments that provide students focused assistance along with their tense and aspectual marking proficiency.

Finally, the results emphasise how AI technology may significantly improve FL students' visual and auditory learning experiences in relation to tense and aspect by offering multimedia resources like videos and interactive lessons. These findings show that participants are in unanimous agreement, with a mean score of 5.73 and an incredibly low standard deviation of 0.31. This is consistent with Blake's (2013) research on the use of technology in language learning. Blake (2013), highlighted how multimedia tools may be transformational by offering a variety of learning modes that accommodate different student preferences and learning styles. The affirmative reaction to visual and aural stimuli is consistent with multimodal learning principles, which emphasise the use of various sensory inputs to improve understanding (Fageeh, 2011). Moreover, this discovery illustrates the potential of AI-powered programmes to accommodate a range of learning styles, guaranteeing FL students a thorough and customised education throughout their learning of tense and aspectual marking in the FL.

Grammarly and ChatGPT have developed as crucial tools that provide instantaneous feedback and tailored interactions, resulting in enhanced comprehension and self-assurance when using diverse tense and aspect forms. Nevertheless, the undergraduate students also engaged in the exploration of various platforms emphasized the significance of broadening their approach to learning. Pro-Writing-Aid is a notable tool that offers extensive assistance by conducting in-depth analysis of writing style and structure. It particularly emphasises the identification and rectification of problems related to tense and aspect, thereby serving as a virtual writing teacher for refining sophisticated language use. The Language Tool software, due to its focus on grammatical accuracy, has made a substantial contribution to enhancing comprehension of tense and aspect forms. The use of Reverso's translation tool in its original context enhanced the ability to discern subtle variations in tenses and aspects, hence expanding the intellectual perspectives of the undergraduate students. In addition to providing grammatical checks, WhiteSmoke also supplied ideas for developing the students' grasp of the contextual use of tenses and aspects.

The aforementioned results highlight the need of using personalised and comprehensive strategies in the process of language acquisition, which aligns with the complex nature of acquiring proficiency in tense and aspect forms. The students were able to customise their learning experiences by comparing and integrating different AI tools, therefore concentrating on particular areas requiring improvement. The underlying commonality seen across their respective experiences was the notable improvement in both self-assurance and accuracy while using various tense and aspect forms, with a particular emphasis on the significant influence exerted by artificial intelligence (AI) technology in moulding linguistic competency. Moreover, the aforementioned results underscore the significance of artificial intelligence (AI) tools not alone for rectifying errors, but also for furnishing comprehensive explanations and contextually tailored learning experiences. This serves to enhance students' understanding of intricate grammatical principles, as highlighted by the perspectives of Undergraduate 1, Undergraduate 2, and Undergraduate 3.

Within the realm of foreign language teaching, the use of various artificial intelligence (AI) systems presents a multitude of valuable learning prospects. The tools provide personalised feedback, enabling students to concentrate on certain areas of development. The use of tools such as Pro-Writing-Aid and Reverso underscores the need of all-encompassing language teaching platforms that cater to not just grammatical precision but also contextual and stylistic subtleties. The implications of these findings are of great importance for educators and curriculum designers. They highlight the significance of incorporating adaptable AI tools into language classrooms in order to improve students' understanding and utilisation of intricate grammatical structures, specifically in relation to tense and aspect forms.

CONCLUSION

This thorough research examines the impact of integrating artificial intelligence (AI) technology on foreign language (FL) learning, with a special focus on the complex subject of tense and aspect. The results derived from the quantitative data as well as the in-depth interviews highlight the significant influence that AI tools have on the language learning experiences of students. AI tools such as Grammarly and ChatGPT have shown to be quite beneficial in assisting undergraduate students in swiftly addressing and rectifying tense and aspect issues via their real-time error recognition and correction capabilities. The use of this prompt feedback method has optimised the educational process, strengthening accurate linguistic structures and notably augmenting students' language aptitude.

In addition, the customised tasks provided by AI models have permitted personalised practice, enabling learners to reinforce their understanding of tense and aspect forms. The implementation of individualised activities has not only enhanced their comprehension, but also nurtured their self-assurance in effectively using various linguistic structures. The integration of artificial intelligence (AI) technology has surpassed conventional limits in the realm of education. Providing students with both tailored support and access to a wealth of material, individualised recommendations and multimedia learning materials have had a huge impact on the quality of language education they get. The use of videos and interactive tutorials has shown the integration of visual and auditory learning modalities, which has considerably contributed to the enhancement of students' knowledge and application of tense and aspect. Students may now evaluate their own academic progress using AI methods and pinpoint areas where they can make the most progress. By keeping tabs on how well students are doing on tense and aspect-related homework, teachers may help make sure they have a thorough understanding of these subtle linguistic differences.

In conclusion, the findings of this study reveal how artificial intelligence (AI) technologies will likely change the future of language acquisition. The seamless integration of these technologies has not only revolutionised the learning process, but also fostered a community of language users with exceptional fluency. The discipline of learning a foreign language (FL) is undergoing a radical upheaval as a result of language teachers adopting AI-driven methods. This transformation is characterised by a change in focus towards personalised, interactive, and highly effective learning experiences. The research presented in this study has implications that go beyond the specific topic of tense and aspect. It serves as a basis for a more comprehensive shift in language learning, aiming to provide students with the essential abilities required for effective global communication and cultural comprehension.

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