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Exploring Student Engagement and Perceptions in EFL Using AI-Powered Chatbots

Laura Fedeli[1][0000-0002-1509-0323] and Francesca Raffi[1][0000-0002-7704-4648]

[1] University of Macerata, Macerata, Italy
laura.fedeli@unimc.it; f.raffi@unimc.it

1 Introduction

The widespread adoption of artificial intelligence (AI), particularly through generative tools such as chatbots, has led the international scientific community to explore new educational opportunities. Among these, natural language processing systems enable conversational interactions between users and machines, offering personalized feedback by adapting to user input.

In particular, the affordances of Chatbots are being investigated in the field of foreign language acquisition [1], with a focus on designing learning environments and strategies that promote student autonomy, self-efficacy, and self-regulation. Special attention is being paid to the potential benefits for students with disabilities and learning difficulties.

The emerging line of research on dialog systems (DS) for language learning [2] is the focus of the UNITe project (Universally Inclusive Technologies to practice English), a three-year initiative funded under the Italian PRIN 2022 (Research Project of National Interest) program. The project aims to conduct a comprehensive analysis of existing tools and literature, engage university students in pilot sessions, and ultimately develop evidence-based resources to support the integration of DS into learning practices within Italian universities.

UNITe is coordinated by the University of Bologna, in partnership with the University of Macerata and the University of Naples "L'Orientale".

2 Research overview

The overall objective of the UNITE project is to promote the use of chatbots in the university context as accessible and inclusive technologies for learning English as a Foreign Language (EFL). To develop a comprehensive understanding of the tools, methods, and affordances of AI-based dialog systems (DS), the research team conducted a preliminary in-depth analysis of selected chatbots. These were categorized by domain (general or restricted), platform (e.g., web-based, mobile application), type of conversation (e.g., small talk, roleplay), and key features (e.g., accessibility, feedback, and conversation prompts).

The analysis led to the selection of ChatGPT and Pi.ai as the chatbots to be piloted with a sample of university students from the three partner institutions. The participants consisted of first-year students, aged 19 to 25, enrolled in non-foreign language degree programs.

To ensure the inclusion of students with learning difficulties (DSA) or disabilities, the project collaborated with university support centers to facilitate communication and outreach to students with special educational needs.

A protocol for the experimentation was developed to ensure consistency across the different sessions conducted at the three universities. The sessions were supported by researchers who, either in face-to-face settings or remotely, guided groups of 10–15 students through the piloting of either ChatGPT or Pi.ai. Each session involved two specific, sequential tasks, small talk and role play activities (in varying order), to be completed within a set time frame of approximately 25 minutes. Each session concluded with a questionnaire designed to gather students' opinions about their performance and overall experience during the interactions.

The present contribution focuses just on the analysis on the closed and open-ended responses collected through the post-hoc questionnaires to examine students' expectations and perceptions during their engagement with the AI tools. Through a content analysis approach [3] data were triangulated with variables such as participants' self-declared level of English proficiency and disability status. The coding process revealed two primary categories: immersion in the communication flow (engagement) and quality of interaction (consistency and comprehensiveness).

3 Conclusion

The aim of this study is to assess the potential of AI-powered chatbots to support diverse learners by offering accessible, flexible, and engaging opportunities for language practice. The piloting phase provided a foundation for understanding how AI can be integrated to foster engagement and motivation in EFL learning, especially within the framework of inclusive education.

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