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GENERATIVE AI-SUPPORTED SCENARIO-BASED LEARNING FOR DEVELOPING PROFESSIONAL ENGLISH COMMUNICATION SKILLS AMONG NON-PHILOLOGICAL STUDENTS

Farangiz Maxmudova

Abstract

The growing use of artificial intelligence (AI) in universities has opened new doors for learning foreign languages that are useful in work settings.. Non-philological students rarely get to practice English in real work contexts. This research looks at how well Generative AI-Supported Scenario-Based Learning (GAI-SBL) can build English communication skills for non-philological students. Researchers used a pre-test–post-test approach, with 120 undergraduates split into an experimental group and a control group. Over eight weeks the experimental group practiced with AI-generated scenarios that covered meetings, interviews, presentations, negotiations, problem solving and business letters. Generative intelligence (AI) made the scenarios realistic played the role of a colleague gave language help and offered instant feedback. The control group got the professional English classes. Results showed that the experimental group improved in speaking and writing than the control group. Thus using artificial intelligence (AI) together with scenario-based learning is an effective way to link English teaching with real professional conversation.

Keywords: generative artificial intelligence, scenario-based learning, professional English, communication skills, non-philological students, higher education.

1. Introduction

English communication competence is increasingly important for university graduates preparing to work in multilingual and digitally interconnected professional settings. For non-philological students, English is generally not their primary field of study, yet they may need it to communicate with international colleagues, participate in meetings, deliver presentations, interact with clients, attend conferences, and prepare professional correspondence. Therefore, English instruction for these learners should extend beyond grammatical and lexical knowledge by providing opportunities to apply the language in authentic professional contexts.

One of the major challenges in professional English education is the discrepancy between classroom learning and the communication demands of real-world workplaces. Although students may possess adequate vocabulary and grammatical knowledge, they can struggle to express ideas spontaneously, negotiate meaning, respond appropriately, and manage professional interactions. Scenario-based learning can address this challenge by placing learners in realistic professional situations where English is used as a practical tool for completing meaningful tasks.

The rapid development of artificial intelligence (AI) has created new opportunities for integrating technology into scenario-based language instruction. Generative AI can create realistic professional scenarios, simulate different communication partners, generate discipline-specific language examples, and provide immediate feedback on learners' performance. These capabilities can expand the range of communicative practice available to students and provide more flexible learning experiences. However, further empirical evidence is needed to determine whether the integration of generative AI into scenario-based instruction can effectively enhance professional English communication among non-philological university students.

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Accordingly, this study examines the effectiveness of Generative AI-Supported Scenario-Based Learning in developing professional English communication skills among non-philological students.

The study is guided by the following research question:

1. To what extent does Generative AI-Supported Scenario-Based Learning improve the professional English communication skills of non-philological university students compared with conventional instruction?

It is hypothesized that students who participate in AI-supported scenario-based learning will demonstrate significantly greater improvements in their professional English communication abilities than those receiving conventional instruction.

2. Literature Review

Scenario-based learning is an instructional approach in which students acquire and apply knowledge through realistic situations that require decision-making, interaction, and problem-solving. In foreign language education, this approach is particularly valuable because language learning becomes more effective when learners use language for meaningful and purposeful communication. Rather than focusing only on isolated grammar and vocabulary exercises, scenario-based learning encourages students to integrate their linguistic knowledge and apply it in authentic communicative contexts.

Professional English communication requires learners to perform a range of workplace-related functions, including presenting information, discussing issues, explaining procedures, requesting clarification, responding to problems, and maintaining appropriate professional relationships. Therefore, professional English instruction should provide learners with opportunities to practice these skills through realistic situations that reflect the communicative demands of their future careers.

Generative AI can enhance scenario-based learning by making communicative practice more flexible, diverse, and responsive to learners' needs. AI tools can generate workplace dialogues, professional case studies, interview questions, customer interactions, project-related scenarios, and problem-solving tasks. They can also simulate different communication partners and provide immediate feedback on learners' language performance. These functions create additional opportunities for individualized and interactive practice.

However, the effectiveness of generative AI in education depends largely on how it is integrated into the instructional process. AI-generated materials should be monitored by teachers to ensure their accuracy, relevance, appropriate level of difficulty, and consistency with the intended learning objectives. Therefore, the present study does not regard generative AI as a substitute for the teacher; rather, it is considered a supportive technological component within a structured scenario-based learning environment.

3. Methodology

The study employed a quasi-experimental pre-test–post-test design involving 120 non-philological university students with intermediate English proficiency. The participants were divided into two equal groups: an experimental group of 60 students and a control group of 60 students. Before the intervention, both groups completed a professional English communication assessment to determine their initial speaking proficiency in workplace-related situations.

The intervention was conducted over eight weeks. Students in the experimental group participated in activities supported by generative artificial intelligence and organized around authentic professional situations. These included job interviews, workplace meetings, project presentations, negotiations, customer communication, collaborative problem-solving, and professional email writing. Each scenario required students to use English to accomplish a specific communicative purpose rather than simply reproduce memorized expressions. This approach allowed learners to apply their linguistic knowledge in practical and professionally relevant contexts.

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Generative AI was integrated into the learning process in several ways. First, it was used to create realistic workplace scenarios and profession-related language materials. Second, students interacted with AI-generated characters during simulated professional conversations. Third, the system provided examples of appropriate professional expressions and suggested alternative responses for different communicative situations. Finally, students received immediate feedback, which helped them identify and correct linguistic and communicative errors.

The control group studied the same professional English topics through conventional instructional methods, including textbook dialogues, teacher explanations, vocabulary exercises, role-plays, and writing activities. Thus, the main difference between the two groups was the systematic integration of generative AI into the scenario-based learning process.

Students' professional English performance was evaluated through speaking and writing tasks. Speaking was assessed in terms of fluency, accuracy, professional vocabulary, interactional competence, and situational appropriateness. Writing was evaluated according to organization, vocabulary use, grammatical accuracy, professional register, and communicative effectiveness. Pre-test and post-test scores were compared to determine the extent of improvement associated with the AI-supported intervention.

4. Results

The results showed that students who took part in the AI-supported scenario-based program had better improvement in professional English communication. The group that had the program increased their communication score from 57.5 before the program to 77.7 after the program. That was a gain of 20.2 points. The other group, which did not have the program increased from 57.5 to 65.7. That was a gain of 8.2 points. The biggest improvement in the group that had the program was in speaking. This was especially true for fluency how they interacted and using vocabulary that's specific to their profession.

The writing results also showed a difference between the two groups. Students in the group that had the program did better at organizing messages choosing the right words and keeping the right professional style. These results show that when students had repeated chances to practice in real-life situations and got feedback from AI they were better, at using what they learned in professional communication.

Communication measure	Experimental pre-test	Experimental post-test	Control pre-test	Control post-test
Professional speaking	56.8	78.4	57.1	65.3
Professional writing	58.2	76.9	57.9	66.1
Overall communication	57.5	77.7	57.5	65.7

5. Discussion

The findings show that Generative AI- Supported Scenario- Based Learning can greatly improve English communication skills for non- philological university students. Generative AI- Supported Scenario- Based Learning helped the experimental group perform better because the learning activities were real and interactive. Students had to use English to solve problems share information make decisions and react to situations. These activities linked language learning closely to students future professional needs.

Another important factor was the chance for repeated interaction with AI- generated scenarios. Unlike fixed textbook dialogues AI- supported scenarios could be changed to match students skill

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level, subject area and communication needs. Students could therefore meet versions of similar professional situations and try alternative language responses.

Immediate feedback may also have helped improve results. Students could spot gaps in grammar, tone and communication choices while learning, instead of waiting for delayed teacher correction. Spotting gaps made learning more interactive and responsive.

The results also show that Generative AI- Supported Scenario- Based Learning can help close the gap between English proficiency and professional communication. Generative AI- Supported Scenario- Based Learning is especially important for students because their main goal is not to study language itself but to use English as a tool, for academic and professional communication.

6. Conclusion

The findings demonstrate that Generative AI-Supported Scenario-Based Learning can effectively enhance professional English communication skills among non-philological university students. Students who participated in AI-supported scenario-based activities showed greater improvement in both speaking and writing performance compared with those who received conventional instruction. These results suggest that the combination of authentic professional contexts, repeated communicative practice, and immediate AI-generated feedback can create more effective opportunities for language development.

The effectiveness of this approach may be attributed to its integration of realistic workplace situations with interactive practice and timely feedback. Generative AI can therefore serve as a valuable instructional resource for professional English education when it is incorporated into a structured and teacher-guided learning process rather than used independently.

The study was limited to an eight-week intervention and intermediate-level university students. Further research should examine longer-term effects and investigate a wider range of profession-specific scenarios. Future studies could also explore the effectiveness of AI-supported scenario-based learning in fields such as engineering, economics, medicine, and information technology.

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