

Theoretical and Pedagogical Implications of using Artificial Intelligence for the Development of Communicative Competence

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Abstract— *In the globalized world of today, the demand for English language proficiency is continuously increasing. This has resulted in the transformation of language teaching pedagogies with the inculcation of diverse technologies in the classroom. These technologies are an innovative feature in the internet sphere, more popularly known as artificial intelligence (AI). AI-based apps have been seen to have a positive impact in enhancing the learner's levels of communicative competence. Communicative competence can be simply defined as 'the ability to use language appropriately and accurately in different contexts'. This paper aims to revisit the basic models of communicative competence proposed by linguists and provides a critical analysis of how the different AI-based technologies help to strengthen the distinct aspects of communicative competence. Nevertheless, this aspect of language learning is also bordered by certain ethical concerns which calls for attention on the part of the instructor/teacher. Therefore, this paper attempts to shed light on the advantages and the constraints that may arise due to the use of artificial intelligence in language teaching classrooms from a theoretical and pedagogical perspective and calls for a balanced approach in imparting language education.*



Keywords— *artificial intelligence, communicative competence, language education, pedagogy*

I. INTRODUCTION

The concept of 'communicative competence' has its root in the field of linguistics. The main advocate of this theory was Dell Hymes who coined this term in 1966 to address the gap left behind by Chomsky's classic distinction between *competence* vs *performance*. Hymes argued that the knowledge of the grammatical rules of a language cannot solely make an individual a proficient language user. The contextual knowledge of how to use a language appropriately in a certain context makes the communication process successful and meaningful. This is in stark contrast to Chomsky's notion of linguistic competence which reduces a language as a mere grammatical unit. Since its inception, the concept of

'communicative competence' is continuously evolving and now it is being realized as one of the central goals of language education. The multidimensional nature of the concept of 'communicative competence' is substantiated by the fact that it encompasses the different notions of communicative competence under its umbrella, i.e., linguistic, sociolinguistic, discourse and strategic competence. The nurturing and honing of this concept has undergone further transformation in the language teaching classrooms by the emergence of digital technologies.

Artificial intelligence takes up the most dominant role among the different types of digital technologies present for language teaching. For example, the usage of AI tools like chatbots can significantly enhance the learners'

speaking, thereby making them more confident speakers of the English language. Similarly, speech recognition technology cater to the diverse needs of various learners and improve their pronunciation skills to a great extent. In addition, these technologies are always accompanied by the advantages of giving personalized instructions and instantaneous feedback. However, these platforms have to be critically evaluated in terms of their role in engaging with the established theories of communicative competence and the amount of human intervention required while using them in the language teaching classroom.

Therefore, the role of this paper is the critical evaluation of the role of AI in the development of communicative competence from a theoretical and pedagogical perspective. This paper aims to address the following questions:

1. How do the diverse communicative competence frameworks accommodate the integration of the various AI tools in language education?
2. How can the different AI-based tools strengthen or act as a constraint in the development of communicative competence?
3. What are the different pedagogical and ethical factors to be considered while using AI technologies in the arena of language teaching?

II. THEORETICAL FOUNDATIONS OF COMMUNICATIVE COMPETENCE

2.1 Hymes' Sociolinguistic Perspective

This viewpoint was put forward by Hymes which was a reaction against the view of language being seen as a grammatical entity only. He maintained a stand that using a language essentially involves the knowledge of the diverse contexts and the rules governing language use in these scenarios. Therefore, constructs like appropriateness, context and social meaning need to converge with AI-based language learning models which is a critical issue.

2.2 Canale and Swain's Model

In 1980, Canale and Swain came up with this framework which holds the four key components of communicative competence at its core- grammatical, sociolinguistic, discourse and strategic competence. The evaluation of AI-based tools with reference to this framework has shown that grammatical and discourse competence can be enhanced to a great extent by the use of AI tools as they help in generating meaningful and logically structured piece of texts. Additionally, they are also equipped to perform a well-defined linguistic analysis of the utterances produced by learners and give the necessary feedback on

the same. But, the development of the dimensions of sociolinguistic and strategic competence poses a serious concern due to the inability of AI tools to understand the diverse sociocultural norms. As far as strategic competence is concerned, some AI apps may come up with techniques to overcome communication barriers but there is always a dearth of knowledge regarding the committed use of such strategies.

2.3 Bachman's Communicative Language Ability

In 1990, the concept of communicative competence underwent a transition when Bachman came up with an expanded framework that combines the knowledge of the language along with the knowledge of using it appropriately in different contexts using diverse strategies. In other words, it is a resourceful amalgamation of knowledge, skills and context. This is in alignment with the AI-based technology whose adaptive nature and the ability to respond to learners' input in real time makes it quite relevant to this framework.

III. ARTIFICIAL INTELLIGENCE IN LANGUAGE EDUCATION

3.1 Defining Artificial Intelligence in Pedagogical Contexts

Just like any other domain, artificial intelligence has created its mark in the field of education too. It refers to the usage of various AI technologies to strengthen the process of teaching and learning. As far as the process of language learning is concerned, it makes use of applications like intelligent tutoring systems, automated writing evaluation, speech recognition and many other AI-based apps.

3.2 Evolution of AI-Assisted Language Learning

The first computer-assisted language learning (CALL) programs emphasized on rule-based practice without any understanding of the context and very restricted interaction. Gradually, the tendency shifted towards simulation systems, natural language processing in combination with adaptive learning and intelligent interaction models. So, the communication process became more dynamic in nature with the introduction of enhanced AI-based language learning technologies.

IV. AI AND THE COMPONENTS OF COMMUNICATIVE COMPETENCE

4.1 Linguistic Competence

The term 'linguistic competence' includes competence in the areas of grammar, vocabulary, syntax and phonology. All these language aspects are excellently handled by AI-

based apps by providing instantaneous and constructive feedback as per learner's needs. Technologies such as natural language processing analyzes the learner's output and suggests necessary corrections enhancing their accuracy and fluency in the language.

4.2 Sociolinguistic Competence

This domain of communicative competence is quite complex as far as the inclusion of AI is concerned. Despite the fact that AI can simulate certain contextual conversations or register variation, the fact remains that it lacks real life cultural experience and human emotions such as humour and sarcasm. Therefore, pragmatic instruction becomes a very challenging task as far as AI-based language learning is concerned.

4.3 Discourse Competence

AI-based tools can act as a good source for enhancing the learner's discourse competence. This is normally done by using chatbots and dialogue systems where the learners can practice the different types of discourse conventions such as turn-taking and produce coherent conversational patterns. These are the many ways in which AI-based apps strengthen the learner's discourse competence even though AI-based language learning models can never really predict human communication at any level.

4.4 Strategic Competence

AI-based technologies are restricted as far as the area of strategic competence is concerned. The major constraint lies in the fact that even though AI can model or simulate strategies to overcome communication breakdown, there is always a lack of genuine communication. Therefore, it is a challenging task for AI-based models to negotiate meaning as it happens in real life communication process and hence over reliance on these technologies to enhance the levels of strategic competence becomes risky.

V. PEDAGOGICAL IMPLICATIONS

5.1 Personalization and Adaptive Learning

AI carries the distinctive feature of personalizing the content according to the learner's needs which has made it quite popular among the Gen Z learners. In this process, it provides specialized tasks for each learner depending on their thrust areas and gives tailored feedback for the same. It provides a different set of instructions for different learners and hence drives them towards autonomous, self-directed learning making the language learning process more effective. In this way, AI-based technologies align themselves with learner-centred approaches to communicative language teaching.

5.2 Teacher Roles and Professional Agency

It is very important that the learners make judicious use of AI and AI-based technologies. This can only happen when AI tools are used as a complement to teaching rather than as a replacement in the language teaching classroom. It is an undeniable fact that the instructor's role has undergone a drastic transformation with the inculcation of such technologies into the teaching pedagogy. Now, the teacher is expected to act as a facilitator, guide and a critical evaluator of the AI-based learning experiences. Nonetheless, the instructor's role also comes with a huge responsibility where the effectiveness of the language teaching and learning process depends upon their ability to integrate AI tools within the communicative structure.

5.3 Assessment of Communicative Competence

The assessment techniques offered by AI are instantaneous and quantifiable but the concern surrounding this evaluation process is that it does not emphasize much on the competence levels relevant to real-life interaction process. Rather, it gives more importance to measurable linguistic aspects such as grammar, vocabulary etc. Therefore, it is very crucial to have a critically evaluated balanced approach combining the shrewdness of human evaluation and the scalability of AI-based evaluation techniques.

VI. ETHICAL CONSIDERATIONS

Any new technological advancement comes with its own set of advantages and disadvantages and the field of AI is not an exception in this regard. It raises some serious ethical concerns related to data privacy, biased nature of AI-generated algorithms and essentially treating the human communication process as a commodity. It implies that the communication process should be seen as a means of interaction which ultimately leads to exchange of information and not as a profitable system for information exchange. Another area of concern in using AI-based technologies in language education is the reduced nature of a genuine interaction process which may negatively influence the foundation pillars of the concept of communicative competence.

VII. FUTURE DIRECTIONS AND RESEARCH GAPS

There are a few areas in AI-based language education and the development of communicative competence that requires an in-depth study. For instance, new language learning models can be developed which would be based on a fair combination of AI tools and human interaction. Also, the interdisciplinary nature of this area calls for

collaboration between different areas. This is important to ensure that the AI-based tools should try to encompass and portray the linguistic and cultural differences while generating the output which will be a manifestation of authenticity and prove to be relevant to real-life communication scenarios.

CONCLUSION

The usefulness of AI in developing the learners' communicative competence levels has witnessed an inconclusive end. The constraints of AI-based technologies in developing sociocultural competence and the ethical issues grounded in it have raised the bar for the need for human intervention in the language teaching process. However, AI-based apps have shown admirable levels of success when it comes to linguistic, discourse and strategic competence. Therefore, this review aims to maintain the perspective of implementing an equitable, critically evaluated and human-centric approach in the area of language education which will positively contribute towards the enhancement of communicative competence rather than downplaying it.

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