

Autonomous Learning strategies of Language Learners in AI Environment

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Abstract

With the rapid development of artificial intelligence (AI) technology, its application in the field of education has become increasingly widespread, bringing new opportunities and challenges to language learning. This paper explores the characteristics, advantages, and implementation pathways of the autonomous learning strategies of language learners in an AI environment. By analyzing how AI technology supports personalized learning, provides intelligent tutoring, and promotes the development of learner autonomy, this paper proposes a framework for AI-based autonomous language learning. The research results show that AI technology can significantly enhance language learners' autonomous learning abilities and learning outcomes, providing useful references for future language teaching reforms.

Keywords

Artificial Intelligence; Language Learning; Autonomous Learning; Personalized Learning; Intelligent Tutoring

1. Introduction

In today's globalized era, the importance of language learning has become increasingly prominent. Traditional language teaching models are often teacher-centered, making it difficult to fully utilize students' autonomy in the learning process. Autonomous learning models emphasize the learner's central role in the learning process, focusing on the development of their self-management, self-monitoring, and self-assessment abilities. In recent years, the rapid development of AI technology has provided new tools and platforms for language learning. AI can not only provide personalized learning resources but also help learners engage in autonomous learning through intelligent analysis and feedback. Therefore, studying the autonomous learning model of language learners in an AI environment has important theoretical and practical significance.

2. Autonomous Learning Model and Language Application Competence

Since Holec[1] introduced the concept of “learning autonomy” in foreign language teaching in the 1980s, the concept of autonomous language learning has attracted considerable attention from scholars and teachers. Bond[2] believed that the fundamental goal of education is to cultivate individuals’ abilities so that they are capable of making decisions about what they think and do. Therefore, the ultimate goal of education is for learners to be independent of teachers and schools, possessing the ability to think, judge, and learn independently. Modern educational theory emphasizes the learner’s autonomy in the learning process. Scholars both domestically and internationally have attempted to define autonomous learning from various dimensions. Holec[1] defined autonomous learning as “a deeper process of taking responsibility for decisions about learning.” Little[3] highlighted the learner’s initiative and independence in the learning process, defining autonomous learning as the ability to reflect critically, make decisions, and take independent action. Dickinson [4] considered autonomous learning an attitude, while also noting the importance of the learning environment for the learner’s autonomy. Whether autonomy is defined as an ability, attitude, environment, or learning process, it is crucial to ensure its implementation. Learners must possess the ability to take responsibility for their learning, which is not innate but must be cultivated and improved continuously to reach a certain level and be fully developed under the right conditions.

Since the 1970s and 1980s, there has been an increasing awareness that the ultimate factor determining the outcome of learning is the learner themselves[5]. As a result, autonomous learning has become a hot topic in foreign language teaching practice. Autonomous learning can be summarized as learners willingly taking responsibility for their own learning, managing their learning behavior, setting learning goals (short-term, mid-term, and long-term), choosing suitable learning strategies and methods, monitoring the learning process and progress, and self-assessing the effectiveness and goal achievement. Therefore, the process of autonomous learning is the process of self-management and self-responsibility. As research on autonomous learning continues to deepen both domestically and internationally, it has become increasingly clear that modern education must ultimately aim to cultivate students’ autonomous learning abilities for lifelong learning[6]. University English learning should similarly emphasize the learner’s autonomy. The “College English Curriculum Requirements” issued by China’s Ministry of Education of the People’s Republic of China in 2024 clearly states that autonomous learning ability is one of the teaching objectives of college English; according to the latest “College English Curriculum Requirements” and related research, the following aspects are emphasized in the requirement for autonomous learning in college English.

The first principle emphasized by “College English Curriculum Requirements” is awareness of autonomous learning. College English teaching emphasizes the culti-

vation of students' autonomous learning ability, requiring students to shift from traditional "teacher-centered learning" to "autonomous learning," gradually forming independent learning concepts, clarifying learning goals, and taking responsibility for their own learning process[7]. The second emphasis is autonomous learning strategies. Students need to master and apply effective autonomous learning strategies, including time management, learning plan formulation, and learning method selection. Teachers should also help students monitor and regulate their learning process through strategy training. The third factor is utilizing modern information technology. Autonomous learning requires students to make full use of multimedia and online resources such as learning platforms and learning software for extracurricular learning. Universities should also provide a good language learning environment and conditions. The fourth aspect emphasized is Enhancing autonomous learning ability. Cultivating autonomous learning ability is one of the important goals of college English teaching. Students need to continuously reflect on and adjust their learning methods, gradually improving the effectiveness of autonomous learning. The fifth principle is forming personalized learning methods. One of the objectives of the teaching model reform is to promote the formation of students' personalized learning methods. Students should choose learning methods and content that suit their characteristics and learning needs. The sixth principle emphasized is actively participating in extracurricular learning activities. Autonomous learning is not limited to the classroom but also includes extracurricular learning activities such as studying in autonomous learning centers, group learning, and one-on-one tutoring. These activities help students better master English knowledge and skills. The last but not least, students need to cultivate reflective and self-assessment abilities. Students need to regularly reflect on and evaluate their learning situation, such as by filling out autonomous learning reflection surveys, summarizing learning experiences, and adjusting learning plans.

3. Approaches to Developing Language Application Competence in Autonomous Learning Model

In the current practice of university English teaching reform, teachers, as guides for students' learning, should focus on developing students' autonomous learning abilities. Under this premise, teachers should use the "College English Teaching Syllabus" as a guiding principle, treating language knowledge learning as a foundation, and language ability as a goal, cultivating students' comprehensive language application competence and laying a solid foundation for the application of the autonomous learning model. In the context of the practice of university English teaching reform, the relationships between the three pairs of key concepts and the following methods are adopted to improve students' self-learning autonomy.

3.1. The three key relationships in College English Teaching

3.1.1. The relationship between Language as a communication tool and com-

munication competence

Language is a communication tool, but it differs from other tools in that it is a product of human thought and social activity and is closely related to the user's thinking patterns, social systems, and cultural traditions. Language knowledge (vocabulary, phonetics, grammar) is a prerequisite for language competence[8]. Having certain language knowledge and cultural background does not equate to improved communication ability. This communication ability depends on our understanding of the culture and society in which the language is used. In college English teaching, improving language communication competence naturally requires acquiring and consolidating language knowledge. However, focusing only on language knowledge may neglect the development of language use skills.

3.1.2.The relationship between testing and teaching

Testing is necessary as it helps teachers understand students' learning status and teaching effectiveness, thereby improving teaching methods. However, tests should focus on teaching content and assess students' language application competence. We should avoid teaching to the test merely for high pass rates and transform exam-oriented education into quality-oriented education[9]. Modern teaching methods should be emphasized to improve the quality of college English teaching. Tools such as audio recordings, videos, films, television, the internet, and multimedia courseware should be fully utilized in college English teaching.

3.1.3.The relationship between discourse analysis, vocabulary learning, and cultural background knowledge

Language teaching should not only teach students how to master language forms but also focus on developing students' ability to use language. Communication takes place at the discourse level, and language learning should also be organized at the discourse level. Therefore, college English teaching should move from the whole to the parts, with information gathering preceding language difficulty analysis. Accuracy should be sought in speed, and details should be grasped within the overall context.

3.2.Adoption of communicative teaching method

The communicative approach was a significant contribution from the international linguistics community to foreign language education in the 20th century[10]. Advocates of communicative teaching argue that foreign language teaching should focus on developing students' ability to communicate in a specific social context rather than merely mastering language structures, prioritizing meaning or function, and making the teaching process communicative. The principles of communicative teaching are reflected in the following aspects:

First, contextualization is the basic premise of foreign language teaching. Without context, discourse does not have communicative function. Therefore, teaching activities should be organized based on the communicative function that discourse can

fulfill in context, ensuring that learning content aligns with students' needs and truly cultivates their ability to use language.

Second, the language teaching process must be communicative. The entire foreign language teaching process should involve real-world social situations and authentic language use. This means that college English classes should avoid mechanical drills and create natural conditions for verbal communication, organizing teaching materials and activities around contextual themes and allowing students to engage in role-playing, information conversion, scenario simulations, and other communicative activities.

Third, college English teaching should be student-centered, with the teacher playing roles as "organizer", "director", and "participant". Teachers should provide and organize various teaching activities, create communicative situations, and help students express their intentions creatively and freely. The goal of college English teaching is to cultivate and develop students' ability to use the communication tool of language.

3.3.Implementation of "Student-Centered" teaching in the classroom

Under the premise of fostering autonomous learning in college English, teachers are more willing to adopt a student-centered approach in classroom teaching. Teachers must be responsible for the entire classroom experience, striving to create an environment conducive to language acquisition. The focus should be on frequent interactions between teachers and students, ensuring that the classroom remains "activated" throughout the learning process.

3.4 Helping students shift their learning concepts and enhance awareness of autonomous learning

Due to the lack of an immersive language environment, college students' main channel for learning English remains the classroom. Many students are accustomed to relying on teachers for detailed instruction, passively accepting knowledge, and then testing their mastery through exercises and simulations. When they enter university, they often feel their English learning is less productive than in high school, which reveals a conflict between their previous learning concepts and university-level English learning requirements. Therefore, helping students develop the awareness of autonomous learning and assume responsibility for their own learning is crucial for improving their English language skills.

4. AI Technology in Language Learning

In recent years, the development of artificial intelligence (AI) assistants has become a significant focus for many universities and research institutions worldwide, particularly in China. These AI systems are designed to enhance the academic and administrative experiences for students, faculty, and staff by automating tasks, improving efficiency, and offering real-time support. As the demand for smarter, more

personalized campus services grows, universities have turned to AI to create intelligent assistants capable of handling a variety of tasks that traditionally required human intervention. These assistants leverage natural language processing, machine learning, and voice recognition technologies to provide personalized, efficient services in real time.

Several top Chinese universities have introduced their own AI-driven assistants, which have shown impressive capabilities in enhancing campus life and academic productivity. These AI assistants not only assist with basic queries but also offer advanced functionalities such as emotion recognition, sentiment analysis, and personalized learning support. The development of these systems represents a leap forward in the integration of AI into higher education, with each institution customizing its assistant to meet the specific needs of its community. Below are some notable AI assistants developed by prominent Chinese universities:

For example, Zhejiang University, top 3 university in Chinese mainland, launched “Big Teacher” is an AI assistant developed by the university itself, offering a variety of functions aimed at enhancing the work and learning efficiency of faculty and students. It provides technical support such as intelligent voice recognition and natural language processing, helping students access information about courses, exam schedules, library resources, and other campus services. For faculty, it assists with teaching tasks, such as grading assignments and managing coursework. More importantly, “Big Teacher” analyzes data to offer personalized learning recommendations and course suggestions to meet the diverse needs of users. Its interactive and intelligent features make the university’s digital services more convenient and enhance the overall experience for students and faculty.

Tsinghua University has launched “Tsinghua Xiaoi”, an AI-based smart assistant that can process natural language and provide intelligent Q&A services. It helps students and faculty query academic information, class schedules, campus activities, and campus news. The assistant is also capable of voice recognition, sentiment analysis, and has some learning capabilities.

Peking University has launched Peking University Zhizhu, a campus service-oriented AI assistant that helps students and staff with campus navigation, course queries, exam schedules, library borrowing information, and other inquiries. In addition, it has emotional understanding abilities, providing psychological counseling and emotional support for users.

These smart assistant provide overall help, but focusing on the language learning, the application mainly manifests in the following aspects: personalized learning path design: AI can tailor learning paths for learners based on their language proficiency, learning style, and goals, thereby improving learning efficiency. Intelligent tutoring and feedback: AI language learning software can analyze learners’ pronunciation, grammar, and vocabulary usage in real time, providing targeted feedback and suggestions. Language interaction and communication: Through AI chatbots,

learners can engage in language practice, enhancing their ability to use the language in real-world situations. Learning resource recommendation: AI can recommend appropriate learning materials, such as articles, videos, and audio, based on learners' needs and progress.

AI can design personalized learning paths based on the specific needs and characteristics of learners (e.g., language proficiency, learning habits, etc.). Applications widely used in Chinese mainland include: Duolingo, Speak Pal.ai, AI Jixi Language Tutor, Liulishuo. AI language learning tools can provide real-time feedback on learners' pronunciation, grammar, and vocabulary usage. These tools not only correct errors but also help learners progress continuously. Examples include: Rosetta Stone, LAIX, Youdao Dictionary, Homework help, iwrite english writing correction system. AI chatbots provide learners with opportunities for language exchange, allowing them to practice real conversations and enhance their ability to apply the language practically. Examples include: ChatGPT, AI Utopia, ERNIE Bot, Langua, Kimi Chat, liulishuo. AI recommends suitable learning resources based on learners' progress and interests, ensuring that the learning materials meet their needs and enhance their learning outcomes. Examples include: Quizlet, Lingvist, FluentU.

5. Implementation path of autonomous learning model for language learners in AI environment

In the context of artificial intelligence, the autonomous learning path can be elaborated through several key aspects, including task discovery, self-designed learning plans, execution and feedback, and self-regulation. Combining with the theory of self-directed learning, AI technology can effectively promote learners' initiative, reflectivity, and self-regulation ability during the learning process. The following will analyze these paths one by one.

Task Discovery: The first step in autonomous learning is task discovery. In the AI environment, learners can rely on intelligent recommendation systems and data analysis technologies to identify learning tasks. According to the theory of self-directed learning (SDL), learners are able to choose learning tasks based on their interests, needs, and existing knowledge background. AI can automatically recommend adaptive learning content based on individual differences, helping learners clarify learning goals and ensuring that the learning tasks are appropriate and challenging.

Self-Designing Learning Plans: Once the learning tasks are clear, learners need to design their own learning plans. At this stage, AI can help learners create personalized learning plans through data analysis, goal setting, and resource recommendations. This process aligns with the "self-decision" emphasized in self-directed learning theory. With AI assistance, learners can choose learning paths, strategies, and methods that suit them, and flexibly adjust them according to their own situation. In this process, AI not only provides learning resources but can also automatically ad-

just the difficulty of tasks based on learners' progress, thereby promoting continuous improvement.

Execution and Feedback: After executing the learning plan, AI can track learners' learning processes in real time and provide immediate feedback to help them identify their learning effects and deficiencies. This feedback mechanism is closely related to the "reflection and self-assessment" in self-directed learning theory. In this process, AI provides data-driven feedback that encourages learners to reflect on their learning progress, identify strengths and weaknesses, and adjust their learning strategies accordingly. For example, through automated grading, progress reports, and sentiment analysis, AI can help learners detect problems in their learning and offer suggestions for improvement.

Self-Regulation: Self-regulation is one of the core abilities of autonomous learning. With AI support, learners can flexibly adjust their learning strategies, goals, and pace based on feedback information. AI systems, by analyzing learners' data, offer personalized adjustment suggestions, helping learners achieve self-control and optimize their learning paths. This self-regulation depends not only on learners' reflection and evaluation abilities but also on AI's real-time feedback and adaptive adjustments, further promoting learners' adaptability and efficiency in a dynamic learning environment.

In summary, the autonomous learning path in an AI environment aligns closely with the theory of self-directed learning. AI technology provides comprehensive support in task discovery, self-designed learning plans, execution and feedback, and self-regulation. These technologies help learners maintain initiative during the learning process, enhance their self-management and self-regulation abilities, and ultimately achieve a personalized and efficient learning experience. With AI's assistance, learners can flexibly adjust their learning strategies and optimize learning outcomes within the framework of autonomous learning.

6. Conclusion and Outlook

AI technology provides strong technical support for the implementation of the autonomous learning model for language learners. Through personalized learning path design, intelligent tutoring, and a diversified learning evaluation system, AI can significantly enhance language learners' autonomous learning ability and learning outcomes. However, language learning in the AI environment also faces some challenges, such as learners' dependence on AI technology and the varying quality of learning resources. Future research can further explore how to better integrate AI technology with language teaching, develop more efficient language learning tools and platforms, and provide a higher-quality autonomous learning experience for language learners.

References

- [1] Holec, H. *Autonomy and Foreign Language Learning*[M]. Oxford: Pergamon Press,1981.
- [2] Bond, D. *Developing Student Autonomy in Learning. Second Edition* [M]. London: Kogan Page, 1988.
- [3] Little, D. *Learner Autonomy 1: Definitions, Issues, and Problems*[M]. Dublin: Authentik,1991.
- [4] Dickinson, L. *Self-instruction in Language Learning*[M]. Cambridge: Cambridge University Press,1987.
- [5] Gao Wen. *Methodological Orientation of Vygotsky's Psychological Development Theory — A Study of Vygotsky's Ideas* [J]. *Foreign Educational Materials*, 2023.
- [6] Zhang Ming. *The Cultivation of Language Application Ability in the Autonomous Learning Mode of College English* [J]. *Weekly Journal*, 2018.
- [7] Xie Dan, Deng Tianwei. *The Cultivation of Autonomous Learning Ability in Language Learners under the Blended Learning Mode* [J]. *Education Teaching Forum*, 2016.
- [8] He Kekang. *The New Development of Educational Technology Theory from Blended Learning Perspective* [J]. *Journal of Educational Technology Research*, 2024.
- [9] Yin Rui. *The Design of Topic-based Online Collaborative Learning Activities in Primary and Secondary Schools* [D]. Guangzhou: South China Normal University, 2011.
- [10] Qu Lili. *Enhancing Autonomous Learning Ability in English Curriculum Teaching - A Review of "Research on English Education Theory and Teaching Strategies"* [J]. *Chinese Journal of Education Studies*, 2025.