

Exploring the Integration of Artificial Intelligence in High School English Reading Instruction

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Abstract: With the continuous advancement of the new curriculum reform, high-school English teaching has gradually embarked on a reform path from “traditionalization” toward “digital-intelligent transformation”. Against this backdrop, artificial-intelligence technology has been widely applied and has exerted tremendous effects in improving the interest and effectiveness of English teaching. From the perspective of high-school English reading instruction, this paper discusses the value significance and practical paths for integrating artificial intelligence into English reading teaching, so as to provide references for front-line teachers.

Keywords: High-school English; Reading instruction; Artificial intelligence; Teaching integration; Practical paths

Online publication: October 26, 2026

1. Introduction

General High School English Curriculum Standards (2017 Edition, Revised in 2020) clearly proposes to promote the in-depth integration of information technology with English subject teaching, enrich teaching resources and innovate teaching modes relying on modern information technology, and facilitate the all-round development of students’ core competencies in English ^[1]. In high-school English teaching, reading instruction serves as a vital link and constitutes a key starting point for students to acquire linguistic knowledge, improve language competence and develop core competencies. Traditional reading instruction suffers from monotonous content and rigid modes, and can hardly stimulate students’ learning interest or accurately grasp their learning situations. The application of artificial-intelligence technology can comprehensively boost the interest and effectiveness of English teaching, enable teachers to grasp students’ learning status more precisely and implement effective teaching countermeasures, thus laying a foundation for the improvement of students’ English ability and the development of their core competencies ^[2]. In this regard, while grasping the value brought by the integration of artificial intelligence, teachers shall actively explore practical paths for combining artificial intelligence with high-school English reading instruction, build a new digital-intelligent

form of English reading teaching, and drive the transformation of English teaching from “shallow knowledge instruction” to “in-depth competency cultivation”.

2. Value significance of integrating artificial intelligence into high-school English reading instruction

2.1. Enrich resources and stimulate learning motivation

Constructivism holds that students’ learning activities represent a process of actively constructing knowledge frameworks. In this process, how to activate students’ autonomous motivation becomes the key factor affecting teaching quality and outcomes. The core of reading instruction is to cultivate students’ language sense and improve their pragmatic competence and reading comprehension through substantial high-quality language input, all of which are based on diversified and abundant reading resources ^[3]. In past high-school English reading classes, teaching resources were mainly confined to traditional textbooks, lacking diverse supplementary materials. Meanwhile, traditional English-reading resources are static texts, which appear rather tedious for high-school students. This directly dampens their interest in reading and weakens their motivation for autonomous learning. Artificial-intelligence technology features powerful functions for resource integration and screening. It can bring abundant resources to English-reading instruction. On the one hand, teachers can introduce digital resources such as pictures-and-text materials and micro-lectures related to teaching content, change the previous monotonous text-based teaching mode, create a new multi-sensory and colorful classroom environment for students, strengthen their sensory experience and arouse their learning motivation. On the other hand, teachers can leverage AI technology to generate or push personalized learning resources for students intelligently, fully stimulate their interest in autonomous reading and awareness of in-depth inquiry, help them shift from “being forced to learn” to “wanting to learn”, and promote their better learning, growth and development ^[4].

2.2. Address teaching pain points and realize teaching students in accordance with their aptitude

In previous high-school English reading instruction, restricted by factors such as teaching hours, the concept of teaching students in accordance with their aptitude was often hard to put into real practice. Meanwhile, high-school students show great individual differences in their English foundations, reading abilities and learning-comprehension capacities ^[5]. In traditional reading instruction, teachers tend to adopt a unified teaching mode and cannot take individual student differences into consideration. This results in a situation where underachieving students cannot keep up with learning tasks while top-performing students are left under-challenged, which directly impedes student growth and development. The application of artificial-intelligence technology allows teachers to more accurately grasp students’ English competence and real-world reading-learning conditions, so as to generate precise student profiles. On this basis, teachers can deliver targeted teaching and build a new teaching form of “one-student-one-strategy and precise instruction”, facilitating students’ personalized growth and development ^[6]. Furthermore, with the support of AI technology, teachers can dynamically track students’ learning situations, adjust teaching plans in a timely manner and carry out special training. Teaching modes will shift from “empiricism” to “data-driven decision-making”, so as to better implement the concept of teaching students in accordance with their aptitude and further elevate the quality of reading instruction.

2.3. Empower competency cultivation and promote teaching innovation

At present, core-competency development has become an important task and objective for high-school English

teaching. The new curriculum standards clearly point out that English-reading instruction shall not be limited to basic knowledge such as vocabulary, grammar and sentences, but shall also focus on cultivating students' core competencies^[7]. Nevertheless, traditional reading instruction mainly consists of theoretical knowledge explanation, lacking guidance for students' thinking abilities, cultural awareness and autonomous-learning capacities, which hinders the achievement of core-competency educational objectives. The application of artificial-intelligence technology can renew the educational logic of English-reading teaching and promote the implementation of core-competency education in an all-round way. Specifically, on the one hand, it can innovate teaching modes and provide students with more space for language-practice activities, innovative thinking and collaborative inquiry, which helps foster students' English linguistic competence and thinking abilities. On the other hand, it can introduce a series of cultural-education knowledge based on text contents, help students build cultural confidence and enable them to correctly view differences between Chinese and Western cultures^[8]. In addition, supported by AI technology, English-reading instruction will give greater prominence to students' subject status. This facilitates the integration of core-competency education into every link of course teaching. While improving teaching effectiveness, it safeguards the cultivation of students' core competencies^[9].

3. Practical paths for integrating artificial intelligence into high-school English reading instruction

3.1. Rely on intelligent reading platforms and build a personalized resource-pushing mechanism

The integration of artificial intelligence with high-school English-reading instruction should first focus on innovating the supply mode of reading resources. In traditional English-reading teaching, textbook texts occupy the core position. Due to limited resource variety, the personalized reading demands of multi-level students cannot be satisfied. Therefore, intelligent reading platforms can be introduced. Drawing on their intelligent capabilities for resource integration and management, massive personalized reading resources can be provided for students^[10]. For example, the platform can integrate English popular-science articles, audio-visual materials and excerpts from classic literary works. Meanwhile, resources are tagged according to vocabulary volume, reading themes, text genres and comprehension difficulty to facilitate personalized reading and learning for students. In actual teaching practice, teachers can set reading difficulty levels and themes on the platform in accordance with specific teaching objectives. Then the system intelligently pushes relevant texts based on students' vocabulary mastery, reading feedback data and interest preferences, so as to guarantee personalized and precise supply of reading resources^[11]. Furthermore, for underachieving students, the platform can push picture-and-text-based and audio-visual reading materials to lower reading-difficulty thresholds, or provide shadow-reading services to improve their reading competence. For students with surplus learning capacity, reading themes can be expanded and challenging reading texts can be offered to satisfy their demands for in-depth reading. Thereby, a personalized, efficient, and open new reading-resource system can be constructed, giving full play to the auxiliary and empowering value of artificial-intelligence technologies and platforms for students' English reading.

3.2. Adopt AI-driven learning-situation diagnosis and implement precise stratified teaching

Aiming at the difficulty of implementing aptitude-oriented teaching in current high-school English reading classes, teachers can make full use of artificial-intelligence technology to grasp students' real-world learning

situations and carry out precise stratified teaching. Specifically, AI diagnosis systems can be adopted to monitor students' reading processes, collect data such as answer accuracy, reading duration and error types. Intelligent model analysis generates accurate student profiles and enables teachers to truly understand students' practical abilities in reading vocabulary, reading skills, reasoning and judgment^[12]. Supported by such intelligent data, teachers can conduct precise stratified teaching and design differentiated and personalized reading tasks and training schemes. For instance, for students with small vocabulary reserves and slow reading speed, intelligently generated basic vocabulary-training and reading-skill-training passages can be provided to boost their reading competence. For students with insufficient thinking flexibility, reading tasks requiring reasoning, judgment and critical thinking can be intelligently pushed to cultivate and develop their thinking abilities. In addition, considering the reality of students' dynamic growth, artificial-intelligence technology shall be applied throughout the whole process of English-reading teaching to timely track the growth of students' capabilities, reasonably adjust student groups and teaching strategies. In this way, every student can read and progress at a learning pace suitable for themselves.

3.3. Utilize intelligent assessment tools and construct a dynamic evaluation system for reading competence

Evaluation acts as the “baton” for high-school English teaching. Previous evaluations for English-reading instruction mostly focused on paper-and-pencil tests, featuring obvious singleness and traditionalism in evaluation dimensions. This impairs actual teaching quality and hinders the cultivation of students' English competencies. In this context, teachers may introduce artificial-intelligence assessment tools into English-reading teaching to build a dynamic evaluation system and guide students toward better learning and development. First of all, intelligent assessment systems can give timely marking and in-depth analysis of students' reading performance and generate comprehensive reading-feedback reports. Reports include not only students' reading scores but also precise analysis of their specific reading-comprehension difficulties such as vocabulary understanding, grammar application, reasoning-judgment and main-idea summarization. This helps teachers and students clearly identify ability weaknesses^[13]. Secondly, intelligent-assessment systems can assist full-process evaluation covering pre-class preview, in-class reading activities and after-class reading assignments. Teachers can better understand teaching effectiveness, timely adjust subsequent teaching plans and rhythms, and effectively improve the quality of reading instruction. Moreover, teachers can leverage intelligent assessment tools to innovate evaluation modes. For example, on the basis of teacher evaluation, guide students to independently conduct reading assessments with AI tools and obtain intelligent suggestions and resource recommendations; encourage students to carry out online mutual evaluation and communication among individuals or groups to promote mutual learning and joint progress, and comprehensively lift the quality of English-reading instruction.

3.4. Apply AI instant Q&A to break reading barriers and bottlenecks in autonomous reading

High-school students frequently encounter various problems such as unfamiliar words and incomprehensible long and complex sentences in English reading. Teachers cannot give guidance and replies to multiple students within a short time, which to some extent undermines reading continuity and learning enthusiasm. Under such circumstances, AI tools can be used for instant Q&A services. When students run across new words in reading, they can resort to an AI-powered dictionary to obtain word definitions, pronunciations, and example-sentence usages in a

timely manner, so as to strengthen word memorization and comprehension. When students encounter complicated, long, and difficult sentences, AI tools can analyze grammatical rules and conduct in-depth parsing of sentence structures. This helps students sort out reading logic, enhance reading fluency and improve reading-comprehension competence. When students encounter unfamiliar cultural-background information in reading, AI instant-Q&A tools can provide multi-form background materials including pictures, texts and videos, build bridges for cultural understanding and boost students' autonomous-reading and thinking capabilities^[14].

3.5. Balance technology and humanistic care and build new forms of in-depth reading and emotional interaction

Modern educational technologies generally have a “double-edged-sword” nature, and artificial intelligence is no exception. While providing abundant supplementary resources and personalized teaching modes for high-school reading instruction, it also brings challenges including technological dependence, neglect of humanistic connotations and weakened teacher-student emotional bonds. Teachers shall correctly perceive and cope with these issues, define reasonable boundaries for technology application and stick to the educational essence of reading instruction^[15]. First, it shall be clarified that artificial-intelligence technology plays an auxiliary role in teaching. It can be used to optimize reading resources, diagnose learning situations and innovate teaching approaches, but teaching tasks shall not be fully delegated to AI. In reading classes, teachers shall make greater use of verbal guidance and scenario creation to lead students to appreciate linguistic beauty, ideological implications and cultural connotations of texts, so as to avoid excessive technological dependence. Secondly, in-depth interaction between teachers and students cannot be replaced by modern technologies. In class, teachers can take advantage of AI convenience to carry out critical-thinking discussions, role-playing, group inquiry and other activities. Classroom interaction shall break excessive reliance on modern technologies and return to genuine interpersonal dialogue and in-depth communication. Thereby, students' learning experience can be enhanced; they can develop linguistic competence, improve thinking quality, strengthen cultural literacy, and foster autonomous-learning abilities in communication, expression, and listening. Artificial-intelligence technology shall truly serve students' all-round development and facilitate the realization of core-competency educational objectives.

4. Conclusion

To sum up, under the background of digital-intelligent education, high-school English-reading instruction is in urgent need of digital-intelligent reform. Artificial-intelligence technology shall be adopted to optimize teaching resources, innovate teaching modes and improve teaching outcomes. Teachers shall deeply understand the value of integrating artificial intelligence into English-reading teaching and actively explore effective countermeasures for their in-depth integration. In particular, intelligent reading platforms, AI-based learning-situation diagnosis, intelligent assessment tools and AI instant Q&A shall be leveraged to arouse students' reading interest, cultivate their reading abilities and develop their English competencies. Meanwhile, rational application of artificial-intelligence technology is required to get rid of obstacles such as technological dependence and weakened teacher-student emotional bonds. Give full play to the auxiliary teaching value of AI technology, enable artificial intelligence to truly boost the quality and efficiency of high-school English reading instruction, and promote the high-quality advancement of smart education for high-school English.

Disclosure statement

The author declares no conflict of interest.

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