

Research Article

An Empirical Study of Integrating Information Technology in English Teaching in Artificial Intelligence Era

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Affordance of information technology in artificial intelligence era is accelerating its increasing integration into English teaching all over the world. However, the implementation of integrating information and communication technology requires the transformation of teaching concepts, the optimization of teaching strategies, and the innovation of teaching methods. This empirical study, which is based on analysis of status quo of college English teaching modes in China, aims to explore pedagogical challenges and motivate English teachers to take initiative to transform their classrooms with technology. It further proposes a framework as well as some innovative strategies in implementing the reform in college English classrooms. An exploratory study was conducted using the framework, indicating that integrating information communication technology into education can greatly enhance teaching efficiency, effectively improve learning outcomes, and promote students' positive attitude towards learning.

1. Introduction

A national reform of College English teaching in China, in which emphasis was placed on use of information and communication technology in classroom teaching and self-access learning, has challenged teachers of English as a foreign language to adapt to new teaching materials, student-centred classroom teaching and to guide students in their autonomous learning [1]. Informationized teaching, with its advantages of innovation, integration, and diversity, is expected to make up for the weakness of traditional teaching. Under the wave of artificial intelligence era, the teaching innovative reform of college English is also impacted by the development of information technology. The application of modern information technology to college English teaching has not only modernized, diversified, and facilitated the teaching methods but also changed the teaching concepts, teaching contents, and teaching methods. As a very important subject in the teaching curriculum of Chinese universities, English teaching information reform is imminent [2]. In order to better carry out the reform, teachers need to have a command of the professional informationized knowledge and practical skills. To give full

play to the advantages of information teaching, they also need to constantly ensure that all students are keen on learning and sustaining their interest and motivation. Since the advent of new network media, new changes have taken place in classroom teaching [3]. More and more network resources have also been brought to classrooms. For classroom teachers, it is challenging to integrate the latest information technology as well as the new media resources into their every day teaching practice [4–6]. They need to constantly update their teaching techniques, innovate their teaching methods, and flexibly change their teaching designs [7]. Shen suggests that what is essential for the development of teachers' informationized teaching ability is to strike a balance between promoting the development of teachers' teaching ability and enhancing the development of students' learning ability [8]. Wang also proposed some important principles of teaching college English in the artificial intelligence era, namely, cultivating students' ICT literacy, creating an ICT-specified language environment; enriching teachers' pedagogical knowledge with ICT during the transformative process [9].

In order to keep pace with the development of the 21st century and help students to develop the critical skills,

English teaching should take full advantage of the artificial intelligence by constantly innovating college English teaching methods and bringing personalized teaching methods for students' English writing practice, oral practice, and translation practice. Only in this way, we can constantly improve students' language level, complete good expression and communication in different context, and provide better support and guarantee for the cultivation of language professionals in the new era.

In this study, integration of information technology is examined from a pedagogical perspective in order to optimize its use in English teaching. Based on an in-depth analysis of the status quo of informationized English teaching, a framework of integrating ICT in English teaching as well as some strategies in its implementation is proposed. An empirical study was also conducted to examine its effects.

2. Methods

Informationized English teaching is challenging for most English teachers. Teachers who have rich experience in traditional teacher-centered teaching methods feel it as a burden to learn new technologies. For informationized English teaching, some teachers hope to take the opportunity to improve their teaching level, enrich the teaching content, and reduce their burden through the use of technology. Some other teachers, however, are more traditional and still adhere to the traditional teaching methods. In addition, they are concerned about the effect of the teaching and are skeptical about whether college students can use the network properly without indulging in it [10]. Therefore, it is advisable that schools and universities should actively publicize the importance of informationized English teaching and organize teacher training, so that teachers can be better prepared to use new technology on their classrooms.

Previous studies show that some teachers, especially the older teachers, have been used to the existing information skills and are satisfied with the traditional English teaching methods. Compared with young teachers, they have inadequate training in the use of technology, feeling that the application of information technology is merely to make PPT, download pictures and video resources, and share some resources and websites. Their combination of information technology with daily English teaching activities is not deep enough, with their teaching application of information technology only limiting to teaching evaluation and teaching observation activities, lacking practical exploration and beneficial experience of using information technology in English teaching [11].

Some research shows that teachers more or less have a certain understanding and awareness of informationized teaching, and most teachers have carried out informationized teaching in their actual teaching. But on the whole, college English teachers rely more on the traditional teaching method, and some teachers only occasionally use or rarely use information technology for teaching. In addition, some teachers are slow to accept new things for the reason

that their daily teaching tasks are heavy and their information technology application ability is limited. Even if they feel compelled to carry out informationized teaching, they are too weak to put them into practice, which greatly hinders the development of their informationized teaching ability. In contrast, college students are more likely to accept new teaching method integrating with information technology. As shown in Figure 1, compared with traditional classroom teaching, college students are more interested in informationized English classroom teaching.

Due to the lack of necessary ability and insufficient knowledge, some teachers are not confident in using the information technology, which leads to the conflict and exclusion of using the software or learning platform based on information electronic equipment. Some researchers argue that in order to achieve a desirable integration of information technology into English teaching, a teacher needs a wide range of abilities, including teaching design ability, the content knowledge ability, the ability to use information tools, the informationized communication ability, the information assessment ability and the reflection ability. Therefore, in designing teaching, it takes a considerable amount of time and energy to learn the relevant information technology, which makes many teachers feel embarrassed [12]. In the process of using information technology to screen and integrate network teaching resources, as well as teaching design and implementation, the situation of weak pertinence and low utilization rate of information technology means in English teaching is caused, which results in that information technology would be helpful in solving the problems in teaching [13].

The existing training mechanism is faulty, lacking of long-term prospect for improving teachers' ability in using information technology [14]. The training coverage is low, which cannot cover all English teachers. The training contents are general and lack pertinence. Most of them are just the promotion of information teaching theory and teaching application software and lack practical and methodological guidance. In addition, in terms of form, the training is mainly based on large-scale reports and lectures, with limited duration, single form, less observation of practical teaching, and poor effect. Most of the training is not satisfactory due to the trainees' uneven level in using information technology, the training content being unguided, and the lack of trainer-trainee interaction. As shown in Table 1, there are still many problems in informational English teaching. Through the corresponding reform measures, informational English teaching can be greatly improved.

The improvement of teachers' informationized teaching ability enables teachers to design various flexible teaching activities so as to promote students' participation. Also, through the learning platform for timely evaluation and feedback on students' learning situations, teachers can communicate with students at any time before and after class, greatly extending the time and space of learning. The improvement of English teachers' informationized teaching ability not only affects the quality of English classroom teaching but also is the key to promoting English teaching

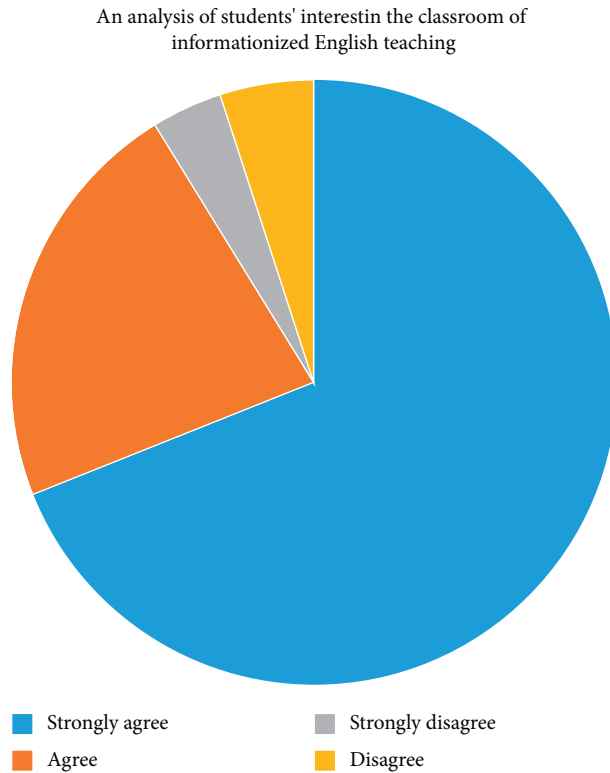


FIGURE 1: An analysis of students' interest in the classroom of informationized English teaching.

TABLE 1: The current problem of informationized English teaching practice and corresponding reform measures.

| The current problem of informationized English teaching practice | Corresponding reform measures |
|---|--|
| The professional application level of teachers' information technology is not high | Schools should enhance the training of teachers and increase the level of information teaching |
| The school's hardware and software configuration is not perfect | Schools should increase investment in autonomous learning platform and hardware facilities |
| Students' participation in autonomous learning and interest in English learning are not active enough | English teachers should adopt diversified teaching modes and information platform to improve students' English autonomous learning ability |

reform and teachers' professional development. The traditional teaching mode also has great limitations. At present, with the development of society, people's access to and transmission of information is very fast, and the social demand for talents is also constantly changing. Due to the limited teaching energy of teachers, the limited energy makes teachers unable to take into account all students in the traditional teaching mode, and the current need is to improve the overall level of education. Therefore, the defects of the traditional teaching mode are shown. Due to the rapid development of artificial intelligence and big data and the popularity of the Internet, the sharing of network resources and the openness and inclusiveness of knowledge are reflected. The cultivation of college students is not only to cultivate students' professional level but also to cultivate students' learning and thinking. At this time, it is more necessary to innovate and improve the traditional teaching mode. The arrival of the new media era provides an opportunity for college teaching. In order to improve the teaching level of colleges, in the new era environment, it is

necessary for colleges to reform the teaching mode. Only by conforming to the requirements of the development of the times, can colleges run in the long run.

3. Results

In the implementation stage of the classroom, teachers can use multimedia technology to create teaching situations, such as using multimedia to show teaching cases in the import link, or playing videos related to the teaching content, so as to mobilize a variety of senses to participate in learning, so as to improve students' interest and make them quickly integrate into the classroom learning atmosphere. Secondly, due to the limited classroom time, we should use a variety of forms to interact with students. Previews before class, teachers lectures and students' participation in class, and after-class practice would improve students' ability to think independently. At the same time, teachers can design scenario simulations and role-play according to the teaching content to encourage students to express themselves in English.

In the actual teaching process, teachers can use the Internet teaching platform to collect a lot of teaching-related information and make it into teaching courseware. Teachers can also download excellent courses from the platform, integrate scattered teaching resources, and finally import these information resources into multimedia devices. Students can clearly watch the teaching content, so that students can better understand the abstract knowledge in the textbook. In addition, English teachers can also play movies, short videos, and other resources to students to create a good English learning atmosphere for students. As shown in Figure 2, teachers can learn autonomously through computers and communicate with students about information-based teaching mode offline, so as to improve their information technology level.

In the information age, it is necessary to give full play to the functional advantages of information technology resources, such as strong interest, large information capacity, and audio-visual integration. According to the needs of teaching, combined with the reality, learning from the useful network resources, we should create teaching scenes close to the actual work, improve the pertinence of teaching, and enhance the students' enthusiasm in learning. Teaching and learning under the artificial intelligence environment is omnidirectional and three-dimensional. In addition to requiring teachers to choose and flexibly use appropriate software tools, schools are also required to have supported informationized teaching software and hardware facilities, including a smooth network environment, intelligent blackboard, intelligent check-in system, artificial intelligence interactive voice room, intelligent teaching platform, etc. These facilities can integrate information technology into all aspects of teaching. In the new media era, it is the future trend for colleges to adopt informationized teaching mode. Therefore, in order to implement informationized teaching methods well, teachers need to have informationized teaching level. In colleges, there are many old professors whose study environment is different from the current social environment. Although they are knowledgeable and powerful, their understanding of the informationized teaching mode is not very deep. If they are allowed to choose, they will be more willing to use the traditional teaching mode. At the same time, although the informationized teaching mode is different from the traditional teaching mode, in the informationized teaching mode, the teacher is still the leader of teaching and the setter of teaching content. With the emergence of new media, teachers should be trained to make use of new media in teaching. Colleges must increase the training of teachers, train them to use new media equipment, and let teachers strengthen the study of computer technology, master office software, and improve the level of software use. In view of the diversified mode of informationized teaching, teachers should also learn the types of multimedia teaching and enrich the teaching content in the cultivation of informationized teaching level. This can not only improve teachers' informationized teaching level but also improve students' interest in learning, so as to improve the teaching effect as a whole.

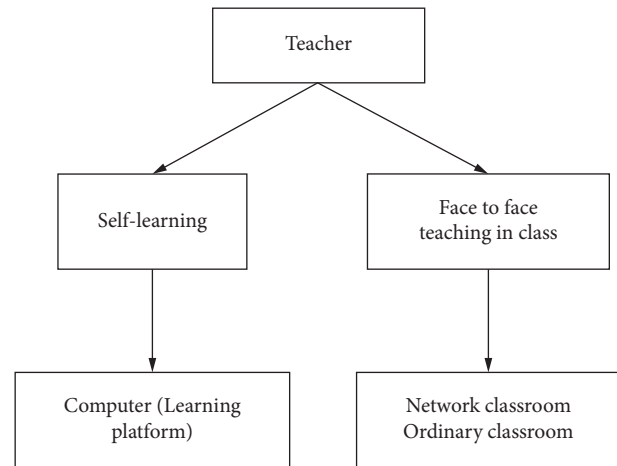


FIGURE 2: The way to improve the level of teachers' information teaching technology.

4. Discussion

The application of modern information technology to college English teaching has not only modernized, diversified, and facilitated the teaching methods but also changed the teaching concepts, teaching contents, and teaching methods [8]. With the advent of artificial intelligence, the application of informationized teaching method in the actual teaching of colleges conforms to the needs of the development of the times and is another milestone in the future development of colleges. Some senior teachers are reluctant to use information technology in their teaching, lacking the motivation to integrate the new technology into classroom teaching [15]. As a result, the information technology level of some English teachers cannot meet the necessary information teaching technology requirements, which leads to the information technology not being well integrated into the teaching content.

The contradiction between the large investment in hardware construction and the low output of informationized education is more prominent, which has become a common problem of informationized English teaching in many colleges and even in various majors. In the construction of information resources, there is a lack of high-quality teaching information resources. Many information resources, such as electronic audio-visual materials, courseware, literature, and question bank, are difficult to integrate with the existing resources. This is a common problem of educational informationization in some colleges.

In view of the limitations of the traditional teaching mode, the informationized teaching mode can effectively solve them. In college English teaching, we should actively use informationized teaching equipment, improve teachers' information level, carry out diversified teaching mode, broaden students' thinking, and improve teaching level. The in-depth development of information technology will definitely transform the college English teaching mode and teaching concept. Under the information technology environment, the reform of college English teaching mode has become an inevitable trend[9]. Although the application of

modern artificial intelligence technology in the field of education has achieved remarkable results, it does not mean that it can replace students' language learning. College English teachers should be aware of their identity and play a role in using AI technology to innovate teaching methods so as to meet challenges in the new era.

5. Conclusion

Integrating information technology into English teaching is of paramount significance to the promotion of educational reform and development of critical 21st skills for students. In this artificial intelligence era, institutions of higher learning should speed up the information construction, strengthen the integration of information technology and teaching practice, build a new teaching mode, and promote the quality of teachers' training.

Data Availability

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Conflicts of Interest

The author declares that there are no conflicts of interest.

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References

- [1] Y. Sun, "Innovation in higher education in China: are teachers ready to integrate ICT in English language teaching?" *Technology Pedagogy and Education*, vol. 20, no. 1, pp. 41–59, 2011.
- [2] C. Gao, "Research on Internet based College English informatization teaching -- a review of informatization teaching technology and methods," *Research on science and technology management*, vol. 40, no. 12, 273 pages, 2020.
- [3] Y. Liu, "The teaching mode of English information in Higher Vocational Colleges under the Internet plus era," *Education Information Forum*, no. 06, pp. 49–50, 2020.
- [4] H. Liu, "On the development of College English teachers' informationized teaching ability," *Research on college foreign language teaching*, pp. 15–23, 2020.
- [5] N. Zhu, "Research on Internet based College informationized English teaching -- a review of College English Teaching Reform under the background of information technology," *Research on science and technology management*, vol. 40, no. 14, 279 pages, 2020.
- [6] Y. Zhao, "Research on the implementation strategy of Higher Vocational English teaching reform from the perspective of information teaching," *English Square*, no. 20, pp. 113–115, 2020.
- [7] W. J. Qiao, "The reform and research of English teaching in higher vocational education under the background of "internet plus," *National Defense Vocational Education Research in China*, vol. 30, no. 2, pp. 14–16+21, 2020.
- [8] G.-R. Shen, "Chinese college English teachers' ability to develop students' informationized learning in the era of big data: status and suggestions," *Eurasia Journal of Mathematics, Science and Technology Education*, vol. 14, pp. 2719–2728, 2018.
- [9] L. Wang, "Research and practice of reform on college English teaching under the environment of information technology," *Theory and Practice in Language Studies*, vol. 10, no. 4, pp. 453–458, 2020.
- [10] L. Huang, "Research on College informationized English teaching -- a review of College informationized English teaching reform and micro class teaching mode," *Education and career*, no. 15, 113 pages, 2020.
- [11] P. Mohan, N. Subramani, Y. Alotaibi, S. Alghamdi, O. I. Khalaf, and S. Ulaganathan, "Improved metaheuristics-based clustering with multihop routing protocol for underwater wireless sensor networks," *Sensors*, vol. 22, no. 4, 1618 pages, 2022.
- [12] S. S. Rawat, S. Alghamdi, G. Kumar, Y. Alotaibi, O. I. Khalaf, and L. P. Verma, "Infrared small target detection based on partial sum minimization and total variation," *Mathematics*, vol. 10, no. 4, 671 pages, 2022.
- [13] U. Srilakshmi, N. Veeraiah, Y. Alotaibi, S. A. Alghamdi, O. I. Khalaf, and B. V. Subbayamma, "An improved hybrid secure multipath routing protocol for MANET," *IEEE Access*, vol. 9, Article ID 163043, 2021.
- [14] V. Mani, P. Manickam, Y. Alotaibi, S. Alghamdi, and O. I. Khalaf, "Hyperledger healthchain: patient-centric IPFS-based storage of health records," *Electronics*, vol. 10, no. 23, 3003 pages, 2021.
- [15] Y. Wu, "The study of informationized English teaching mode in Higher Vocational Colleges under the background of "Internet plus,"" *Campus English*, no. 30, pp. 120–121, 2020.