

Research on the Cultivation of Medical College Students' Multiliteracy in English under the Multimodal Approach

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Abstract: With the in-depth advancement of the digital age and the rapid development of information technology, information-based teaching has increasingly become an important means of teaching reform. The dissemination and use of multimodal discourse are also becoming more frequent, and elements such as images, audio, and video are being applied more frequently in teaching. The medical profession is one of the key fields for cultivating high-quality medical and nursing talents. Good English application ability is an important criterion for cultivating medical professionals. Strengthening English teaching for medical college students has become an inevitable trend of the times. Medical colleges should uphold the teaching concept of keeping pace with the times, give full play to the value of multimodal teaching supported by information technology in cultivating medical students' English abilities, and promote the comprehensive improvement of students' comprehensive qualities. Against this background, this paper focuses on the multimodal cultivation of the reading and writing abilities of medical students in vocational colleges. Starting from the basic concept of multimodality, it explores the application and effects of the multimodal teaching model in the cultivation of medical English reading and writing abilities, aiming to improve teaching quality and effectiveness, strengthen students' English reading and writing skills, and cultivate high-quality medical talents with equal emphasis on language ability and professional literacy.

Keywords: Multimodality; Medical profession; Higher education; English reading and writing abilities

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1. Introduction

Higher vocational education is an important part of higher education and plays an indispensable role in cultivating high-quality vocational talents. Medical vocational colleges play a crucial role in delivering high-quality medical and nursing talent to society. However, the traditional single-modality-based expression method can hardly meet the social needs of modern individuals, and the teaching model mainly based on it is also difficult to adapt to the diversified teaching needs of students. In the teaching of English reading and writing

abilities for medical college students, the old-fashioned cultivation methods of reading and writing abilities are gradually showing their limitations. Reading and writing abilities have gradually transformed into a multi-symbolic and diversified modality. Therefore, teaching methods should also be appropriately adjusted to better meet the requirements of society for the comprehensive development of medical talents. Based on this, this paper takes multimodality as the focus of teaching medical college students' multiliteracy in English, explores effective strategies for improving students' language skills, and provides a more novel, diverse, and high-quality English classroom for students by analyzing and optimizing various teaching elements, to comprehensively improve the quality of medical talent cultivation ^[1].

2. Discussion on relevant concepts

Multimodality involves the use of multiple semiotic systems, such as text, pictures, sounds, and body language, to transmit information and communicate with each other ^[2]. Multimodal teaching emphasizes the participation of multiple senses such as vision and hearing, and makes full use of various teaching resources such as pictures, texts, videos, and audio to provide students with a richer teaching experience, thereby enhancing learning effectiveness ^[3]. In traditional reading and writing ability teaching, the teaching model based on paper media is often over-emphasized, while the trend of the diversified development of students' reading and writing abilities in the new digital age is ignored. Objectively speaking, the traditional single-modality teaching model no longer meets the teaching needs of medical college students' reading and writing abilities, and teaching reform is imperative ^[4].

Multiliteracy refers to an individual's ability to use and understand multiple semiotic systems, including text, images, sounds, and actions, to communicate effectively and understand information in different situations, media, and cultural backgrounds. Compared with traditional reading and writing abilities, multiliteracy also expands the ability to process and interpret a variety of non-text information, such as moral literacy, social communication literacy, innovation and reform literacy, cross-language and cross-cultural literacy, media technology literacy, modality-pattern literacy, as well as selection and search abilities. For medical college students, cultivating multiliteracy plays a very important role in reading literature, improving clinical communication skills, and writing medical research reports. Strengthening multiliteracy in English is also a necessary condition for adapting to globalization ^[5].

3. Specific paths for cultivating medical college students' multiliteracy in English under the multimodal approach

3.1. Respect students' status and clarify teaching objectives

English teachers in vocational colleges, in the face of the special requirements for cultivating medical professionals, should combine the characteristics of the times, deeply interpret the changes in students' actual needs brought about by the diversified development of reading and writing skills, pay attention to the specific language application needs of medical students, fully respect the dominant position of students in teaching activities, and clarify teaching objectives to guide the multimodal teaching concept and model. In the new era, medical students should not only master the ability to read traditional text-based information but also possess the ability to process diversified information, such as analyzing electronic data, interpreting English literature, and understanding professional terms, to better adapt to the international medical environment ^[6]. Therefore, when designing courses, teachers should focus on cultivating students' comprehensive language application ability.

Firstly, cultivate students' good digital skills, interdisciplinary awareness, and deep-learning ability, and enable them to have the ability to identify, evaluate, and interpret texts, to better adapt to the language characteristics of their majors. Secondly, pay attention to practical teaching to help students accumulate multiliteracy experience. Currently, many medical students lack experience in practical operations, have relatively weak abilities to understand diversified information in digital texts, have difficulty integrating information across disciplines, and need to improve their ability to identify the authenticity of information. Based on this, teachers can adopt case-based teaching methods and project-based teaching methods to cultivate students' information literacy and accumulate multiliteracy experience, laying a foundation for the development of their language skills. In short, when formulating teaching objectives, teachers should first consider students' actual needs and future career development, clarify the specificity and operability of teaching objectives, and at the same time, pay attention to enhancing the practicality and innovation of the development of medical students' multiliteracy. By improving language ability, students can better understand medical knowledge, strengthen their professional literacy, and enhance their professional competitiveness^[7].

3.2. Enrich teaching content and stimulate students' interest

In the teaching reform of medical college students' multiliteracy in English under the multimodal approach, the traditional single-dimensional teaching content is no longer applicable. It cannot meet the diversified ability requirements of medical students in the development of the times, nor can it adapt to the ever-changing learning needs of students. Therefore, teaching content should be expanded, innovated, and deepened to stimulate students' learning interest and enthusiasm. In medical English courses, teachers should comprehensively consider the requirements for cultivating medical talents, future career development, as well as the age characteristics, interests, hobbies, and cognitive development laws of college students, and design teaching tasks centered around students, mainly including English reading and writing, emphasizing the cultivation of students' critical thinking ability and cross-cultural communication ability^[8].

Firstly, construct a multimodal corpus, integrate multiple resources such as text, images, audio, and video to enrich teaching content. Specifically, vocational colleges can jointly construct a digital teaching resource library with relevant entities, collect English materials related to medical majors from a variety of channels, such as rich online medical resources, offline medical periodicals, and actual enterprise cases, and classify and organize them to form a systematic teaching resource library. In the process of constructing the multimodal corpus, attention should be paid to the diversity and comprehensiveness of the corpus. It should not only cover paper materials, electronic courseware, audio, video, and other materials, but also include aspects such as eye contact and gestures between teachers and students, to ensure the diversity and representativeness of the corpus and be in line with the actual situation of medical English teaching. To further improve the speed and quality of corpus processing, artificial intelligence technology, multimedia text-processing tools, etc., can be used to identify and classify multimodal corpora, providing a basis for subsequent teaching applications and in-depth research. Subsequently, when cultivating students' reading and writing abilities, teachers can use artificial intelligence automated processing and analysis technology to flexibly utilize resources according to teaching needs, improving teaching efficiency and quality. Secondly, make full use of artificial intelligence technologies such as ChatGPT to inspire teaching students' reading and writing ability. When students independently complete reading and writing tasks, they can obtain creative prompts through ChatGPT to deepen their understanding and expression. More importantly, after completing the tasks, students should present their work in the form of PPTs, videos, etc., and share their learning experiences and reflections, so that students fully understand the role of practice in enhancing

multiliteracy, effectively cultivate good reading and writing habits, not only improve the language skills of medical students but also enhance their teamwork ability and critical thinking ability^[9].

3.3. Innovate teaching methods and deepen teaching effectiveness

In the process of multimodal teaching, the status of students as the main body of learning becomes more prominent. Teachers should change their role positions, transforming from knowledge transmitters and classroom leaders to guides and assistants in teaching activities. Therefore, in the process of innovating teaching methods, teachers can focus on highlighting the dominant position of students in teaching activities and stimulate students' initiative and creativity by designing open-ended questions and guiding independent exploration. Specifically, teachers can use virtual reality technology to create realistic medical work scenarios for medical students, allowing students to immerse themselves in the simulated environment, stimulate their learning interest, and at the same time, push medical-related discourses such as medical record notes and surgical operation guidelines to students, enabling students to learn to reasonably analyze and use multimodal information in practical operations and cultivate their comprehensive reading and writing abilities. Transform the single-modality teaching method into a combination of multimodality, fully mobilize students' multiple senses, help students understand knowledge more comprehensively and apply it more deeply, and better enhance the effectiveness of teaching^[10].

3.4. Improve the evaluation mechanism and enhance teaching quality

To adapt to the multimodal teaching model, teachers can introduce artificial intelligence technology, big data analysis technology, etc., to monitor students' learning data in real-time and track it dynamically when introducing teaching evaluation, to comprehensively analyze the development of medical students' multiliteracy. On the one hand, establish diversified evaluation criteria. Under the guidance of artificial intelligence technology, teachers can add generative evaluation criteria for students. In addition to traditional periodic exam scores, by tracking and analyzing students' data, the development of students' practical teaching achievements, assignment completion, classroom activity levels, etc., can be integrated into the evaluation criteria, comprehensively and objectively analyzing the development of students' reading and writing abilities, learning attitudes, etc., thereby enhancing the multi-dimensionality and scientific nature of teaching evaluation^[11,12].

On the other hand, increase the diversity of teaching evaluation subjects. In traditional teaching evaluation, teacher evaluation is usually the main method. However, the perspective of teachers alone cannot fully understand students' actual reading and writing abilities, and there are often certain limitations and one-sidedness in evaluation, especially when only periodic exam scores are used as a reference, which greatly affects the accuracy and comprehensiveness of teaching evaluation results^[13,14]. Therefore, forms such as student self-evaluation and peer-to-peer evaluation can be added to the original teacher evaluation to comprehensively assess the development of students' multiliteracy. In addition, the feedback results of teaching evaluation show the development of students' multiliteracy and provide a strong reference for teachers' teaching reform. Teachers can analyze the application results of the multimodal teaching model in cultivating medical college students' multiliteracy in English from the feedback results, as well as the weak points in students' development process, and then analyze the deficiencies in teaching practice, adjust teaching strategies, and improve teaching quality^[15].

4. Conclusion

In conclusion, multimodal teaching has significant advantages in teaching medical college students' multiliteracy

in English. It can not only improve students' language skills, cultivate cross-cultural communication abilities, but also enhance students' adaptability to the development of the times and better meet future career challenges. Medical vocational colleges should objectively and correctly understand the importance of multimodal teaching in cultivating medical college students' multiliteracy in English, deeply interpret the concepts of multimodal teaching and multiliteracy, actively promote teaching reform, and optimize the quality of courses. English teachers should fully consider the special requirements of medical college students in the development of English skills, flexibly use multimodal resources, formulate more scientific and targeted teaching objectives, provide students with richer teaching content that better meets their actual needs, explore more intelligent and modern teaching methods, improve a more scientific and comprehensive teaching evaluation mechanism, and achieve the in-depth interdisciplinary integration of multimodal teaching and English teaching for medical students, to comprehensively improve the multiliteracy of medical talents, strengthen their comprehensive English literacy, and ultimately achieve all-round development.

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