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Construction and practice of training system for innovative talents in media language pronunciation based on goal-oriented + action learning
------ Take the course "Broadcasting and Hosting Language Technology" as an example

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Abstract: This paper focuses on improving the language skills and content construction ability of science and engineering students in science and technology information communication, especially for students who do not have rich language background. To this end, we propose an innovative rapid learning teaching design, which is based on the three-stage teaching concept, including theoretical learning, observation demonstration and practical application in three stages, aiming to optimize the learning experience and improve the learning efficiency. Through theoretical analysis, we explain the key role of language technology in interdisciplinary communication and the cultivation of innovative thinking, and emphasize that the cultivation of language expression ability should not be neglected in science and engineering education. In the teaching design part, we introduce in detail how to combine theoretical knowledge with practical operation through the combination of case analysis and practical projects, students can quickly master the core skills of language technology. In addition, we also share practical cases of the implementation of this teaching reform program in science and engineering universities, showing its remarkable effect in improving students' language application ability. In the chapter of Teaching Reform Practice and Effectiveness Evaluation, we evaluate the effectiveness of this teaching reform measure based on curriculum feedback, student performance and ability improvement data. The results show that after the adoption of rapid learning instructional design, students have made significant progress in the mastery and application of media language technology, and also have a deeper understanding of interdisciplinary communication and innovative thinking. These positive changes confirm the importance and practical significance of language and technology courses in science and engineering education. To sum up, this study aims to explore effective teaching methods of language technology in science and engineering education, in order to promote the comprehensive development of science and engineering students, and lay a solid language foundation for future science and technology work and interdisciplinary cooperation. This teaching reform practice provides a valuable reference for similar courses, which is helpful to further optimize the course structure and teaching strategy of science and engineering education.
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With the popularization and development of higher education, universities of science and engineering gradually realize the importance of general education in personnel training, especially the key role of language technology in interdisciplinary communication and innovative thinking training. However, the existing science and engineering education model has obvious shortcomings in the cultivation of language expression ability. Especially in the face of students without rich language background, how to effectively improve their scientific and technological information dissemination ability and content construction skills has become an important issue in education reform. In this context, we propose an innovative rapid learning instructional design, which aims to help science and engineering students quickly master the core skills of language technology and promote their all-round development through the three-stage teaching concept, namely theoretical learning, observation demonstration and practical application. At present, the universities of science and engineering in our country face some challenges in the implementation of general education. First of all, in terms of curriculum design, science and engineering universities tend to place too much emphasis on the training of practical skills, such as

management, venture capital and computer network technology, while humanities and social sciences courses, especially language courses, are often inadequate and lack depth and systematicness. As a result, the improvement of students' cultural literacy and expression ability is limited. Secondly, the teaching method is based on large classes and lacks in-depth discussion and student participation. General education courses are often one-sided knowledge imparts, which fails to fully stimulate students' active learning. In addition, among the teaching staff, high-level comprehensive teachers are relatively scarce, and well-known professors are more inclined

The transfer of knowledge in professional courses and insufficient investment in general education courses. The role of language courses in the general education of science and engineering universities cannot be ignored. As an effective way to improve students' thinking and cognitive abilities, they can help students establish rigorous language habits, cultivate interdisciplinary communication skills, and enhance cultural identity and self-confidence. However, the setting and implementation of such courses often fail to give full play to its potential, and fail to make full use of the subject advantages of science and engineering universities to carry out in-depth interdisciplinary integration teaching. Therefore, this study aims to explore the teaching reform path of language technology general courses in science and engineering universities, and solve the problems existing in the existing education system through innovative teaching design, so as to improve the language application ability of science and engineering students and cultivate their interdisciplinary communication ability and innovative thinking. Our teaching reform plan is expected to provide a new thinking direction for the curriculum structure and teaching strategy of science and engineering education, promote the in-depth implementation of general education in science and engineering universities, and help cultivate future scientific and technological talents with all-round quality.

The value and function of language technology in science and engineering education1. Social demand and talent quality

1. The importance of language technology for science and engineering students

The importance of language technology in science and engineering education is self-evident. It is like a bridge connecting students' professional learning and interdisciplinary communication, and it is also a key element to enhance innovative thinking. In the era of information explosion, the rapid dissemination and interpretation of scientific and technological information is the ability that science and engineering students must master. Good language skills can not only help them accurately express academic ideas, but also improve their communication efficiency in different cultural backgrounds, which is crucial for future scientific research cooperation in the context of globalization. Language technology is the medium of scientific and technological information dissemination. Science and engineering students need to accurately and efficiently communicate research results to peers and the public in the form of papers, reports, or oral presentations. By mastering language technology, they can improve the logic and readability of scientific and technological texts, ensure the accurate transmission of information, and avoid misunderstandings or omissions caused by insufficient language expression. In addition, learning to use appropriate jargon and technical vocabulary can enhance the professionalism of scientific texts and make it easier for readers or listeners to understand their research results. Language technology is the catalyst for the cultivation of innovation ability. In the process of creative thinking, the ability to communicate clearly is crucial. By learning how to use effective language structures and argumentation methods, science and engineering students are better able to articulate and defend their innovative ideas, thus stimulating more creative thinking. In addition, the training of language technology can also enhance their critical thinking, help them analyze and evaluate others' views more deeply, and promote the diversification and depth of thinking. Moreover, language technology helps to enhance cross-disciplinary communication skills. With the rapid development of science and technology, interdisciplinary research is becoming more and more important. When communicating with colleagues or researchers from different professional backgrounds, science and engineering students need to be able to adapt to and understand different professional languages, and use common communication languages to collaborate. Language technology education can help them

To understand the linguistic characteristics of different disciplines and improve their ability to adapt and adapt to different linguistic environments, thus promoting the smooth progress of interdisciplinary cooperation. Language technology can also enhance students' cultural literacy and international perspective. By learning the cultural connotation behind the language, science and engineering students can better understand the scientific and technological concepts in different cultural backgrounds, which helps them better adapt to and communicate in the global scientific and technological environment. At the same time, good language skills can also improve their

ability to publish works in international academic conferences or journals, opening up a broader development space for their careers. For science and engineering students, language technology is an important tool to realize the accurate dissemination of scientific and technological information, stimulate innovative thinking, promote interdisciplinary communication and cultivate global vision. Therefore, educators must attach importance to the education of language technology in science and engineering courses, and through innovative teaching methods, students can gradually master this key ability in theoretical learning, observation demonstration and practical application, so as to lay a solid language foundation for their future scientific and technological work and interdisciplinary cooperation.

2. Application cases of language technology in different science and engineering majors

In the teaching of different majors of science and engineering, there are various application cases of language technology, which help students improve their ability of scientific and technological information dissemination and content construction in different forms. Here are a few typical application scenarios that show how language technology can be used in practical teaching. In computer science, language technology improves students' logical thinking and expression ability by writing programming documents and algorithm descriptions. In courses such as data structure and algorithm analysis, teachers can guide students to describe the logical flow of algorithms in clear and concise language, ensure that the code is readable, and train them to use technical language to communicate effectively. By viewing excellent project documentation, students are able to learn how to organize and present complex technical information, which is essential for future project reports or academic exchanges. In mechanical engineering, language technology plays an important role in design reports, experimental records, and product descriptions. When students learn materials mechanics, mechanical design and other courses, they need to accurately describe the experimental data, analysis results and design ideas. Teachers can design observation sessions where students learn how to write classic design reports, such as how to use technical terms and how to articulate scientific concepts. Through practical application, students learn how to optimize information structure and improve readers' understanding efficiency in the process of writing reports. In the field of environmental science and engineering, the use of language technology is reflected in the writing of research papers and policy recommendations. After courses such as climate modeling and pollution control, students are required to write academic papers or present environmental protection proposals to policy makers. Teachers can organize students to analyze the structure and argumentation methods of classic papers, and then learn in practice how to articulate research findings in scientific language and how to effectively communicate environmental ideas. This instructional design helps students understand and use policy language to enhance their ability to communicate and influence environmental issues. In biomedical engineering, the application of language technology is especially reflected in the writing of medical research papers and the presentation of clinical reports. Students need to master professional vocabulary and norms of expression to ensure the rigor and readability of research. Teachers can help students learn how to express complex medical problems in scientific and accurate language by viewing professional journal articles. Practical sessions can be designed so that students simulate writing research abstracts or clinical case reports to enhance their medical writing skills. In these majors, the integration of language skills is not limited to the training of writing skills, but also includes the development of effective oral communication and presentation skills. For example, through group discussions, class presentations, and academic workshops, students can practice how to present their ideas in a clear and persuasive manner, which is crucial in technical meetings and project presentations. The application examples of language technology in different science and engineering majors show its practical effect in improving students' ability of science and technology information dissemination and content construction. Through the three-stage teaching of theoretical study, observation demonstration and practical application, science and engineering students can gradually master the core skills of language technology, laying a solid foundation for effective communication and interdisciplinary cooperation in their respective professional fields in the future. Integrating these specific application cases into the course design can not only make the teaching more targeted, but also improve the students' practical ability and comprehensive quality.

Learn instructional design quickly

1. The application of three-stage teaching theory in language technology course

The three-stage teaching theory, namely theoretical learning, observation demonstration and practical application, provides a powerful guide for the reform of language technology curriculum. This model is designed to ensure that students not only acquire theoretical knowledge of language technology, but also translate what they learn into practical skills

through practical observation and hands-on practice. In the language technology courses of science and engineering universities, the application of the three-stage teaching theory is mainly reflected in the following aspects: In the theoretical learning stage, we attach importance to the systematization and depth of knowledge, rather than just a brief introduction. By teaching the fundamental theories of language technology, such as information organization, text analysis, and rhetorical skills, students are able to understand the importance of language in the dissemination of scientific and technological information. Classical theories such as information theory, communication and rhetoric are integrated into the curriculum to help students understand the role of language in information processing and communication at the macro and micro levels. In addition, we also emphasize the interdisciplinary application of language, explaining the typical application scenarios of language technology in different science and engineering majors, so that students can see the practical value of language technology. Entering the stage of observation and demonstration, we introduce real cases and expert explanations, so that students can observe and analyze how to use language technology in specific situations. For example, analyze good research reports, technical documents, or presentations to explore their linguistic organization, presentation of information, and persuasiveness. By watching how professionals write, edit and revise scientific and technical texts, students are able to intuitively understand the application of theoretical knowledge in practical work, thereby improving their imitation and learning abilities. The practical application stage is the core of the whole teaching design, allowing students to consolidate and deepen their theoretical learning in practical operation and cultivate their ability to solve problems independently. Course design involves a series of practical projects, such as writing technical reports, designing speeches or participating in group discussions. These projects require students to apply their language skills to the presentation and dissemination of scientific and technological information. For example, how to describe experimental data clearly and accurately, how to write a logical technical description, or how to make an effective oral presentation. Through feedback and correction, students can constantly adjust their language strategies and improve the application level of language technology. In the whole process, the role of teachers is not only the transmitter of knowledge, but also the instructor and feedback. They guide students to think, discuss and encourage students to experiment with different forms of language expression, and provide timely feedback and suggestions to help students improve step by step. Through the three-stage teaching, we expect that science and engineering students will not only enhance their language application skills, but also cultivate interdisciplinary communication and innovative thinking, so as to be more competitive in future scientific and technological work and interdisciplinary cooperation.

2. The implementation strategy of observation and practice in teaching design

In the teaching reform practice of language technology general courses in science and engineering universities, observation and practice are the key to achieve rapid learning. The demonstration not only enables students to intuitively understand the use of language technology from actual cases, but also stimulates their interest in learning and motivation to imitate. The practical application allows students to deepen their understanding in practical operation and cultivate their ability of independent thinking and problem solving. Below we will elaborate on how to effectively implement observation and practice strategies in instructional design. During the viewing phase, we carefully select representative and inspiring examples that cover scientific and technical texts in different disciplinary contexts, such as high-quality academic papers, reports, speeches and professional documents. Through meticulous case studies, students will understand how to use technical terms, how to construct clear arguments, and how to communicate complex information effectively. In addition, we also invite industry experts and teachers to give live lectures to share their experience in how to use language technology in practical work, so that students can gain first-hand practical knowledge during the observation. In the design of the observation session, we adopted the method of group discussion to encourage students to actively express their views, analyze the advantages and disadvantages of the cases, and try to put forward suggestions for improvement. Such interactions help improve students' critical thinking skills, while also allowing them to learn the language skills of others in the discussion. We also introduce multimedia resources such as video clips, audio recordings and webinars to enrich the viewing experience and meet the learning preferences of different students. The design of the practical phase is also critical. We have designed a range of practical projects relevant to our students' professional background, such as writing abstracts of scientific papers, designing lab reports, planning and executing group presentations, and even participating in real interdisciplinary team projects. These projects require students to apply the knowledge learned during the observation phase to practical language technology

practice. For example, in the process of designing an experiment report, students need to consider how information is organized, how to describe a complex experiment process in concise language, and how to use diagrams to aid in explanation. To ensure that students are adequately guided through the practice process, we adopt a "tutorial system" in which each group has an experienced teacher as a mentor to provide one-on-one feedback and advice. We use online collaboration platforms, such as Google Docs, to allow students to modify and share work in real time, allowing teachers to monitor progress and provide real-time guidance. At the same time, we advocate peer assessment, so that students can improve their language ability in learning from each other. In the practical phase, we regularly organize workshops and seminars for students to present their work, share learning experiences and discuss challenges. Such activities not only help students improve their practical skills, but also develop their teamwork and public speaking skills. At the same time, we will also introduce expert reviews to provide students with professional evaluation and advice to help them examine their own language technology application from a higher perspective. Through a combination of observation and practice, we aim to create a student-centered learning environment where students develop critical thinking, innovation and cross-disciplinary communication skills as they explore the main applied language technologies. The implementation of these strategies not only helps to improve the scientific and technological information dissemination ability of science and engineering students, but also lays a solid language foundation for their future career.

Teaching reform practice and effect evaluation

After the implementation of the language technology general education curriculum reform based on the three-stage teaching concept, we carried out a detailed teaching practice and effect evaluation to ensure the effectiveness and sustainability of the reform measures. This chapter will explore the implementation process of educational reform and the concrete measurement of the effectiveness of educational reform through curriculum feedback, student performance and capacity improvement data. The implementation stage of teaching reform is carried out in strict accordance with the design of theoretical learning, observation demonstration and practical application. In the theoretical study phase, we employ a variety of teaching methods, such as discussions, lectures and case studies, to ensure that students have a deep understanding of the fundamental theories and interdisciplinary applications of language technologies. In the demonstration stage, we introduce classic case studies and expert explanations, so that students can witness high-level technical text writing, as well as practical communication and presentation skills. Practical response

In this phase, we have designed a series of practical projects, such as technical report writing, presentations and discussions, to allow students to use language techniques in real situations, while continuously improving through feedback from teachers and peers. During the implementation of the reform, we noticed that students' participation increased significantly, they became more active in the analysis and writing of technical texts, and they also improved their oral communication and presentation skills. Students demonstrated stronger teamwork and innovative thinking in group discussions and project collaboration, and the quality of their work and their ability to use technical terminology were significantly improved. In addition, the role of teachers has also played a key role in their transfer of knowledge from tradition

The teacher is transformed into a learning instructor and feedback provider, and the interaction with students is more frequent, and the teaching effect is optimized. In the impact assessment phase, we rely on three main aspects to measure the effectiveness of the reform: curriculum feedback, student performance and capacity improvement data. Course feedback is mainly collected through questionnaires, covering students' satisfaction with teaching content, teaching methods, practice links, as well as their feelings on the improvement of personal language skills. Student performance is measured through regular writing tests, speech grades and project assessments, which directly reflect students' practical use of language technology. The ability improvement data relates to students' performance in subsequent courses and projects, such as whether they communicate more effectively in interdisciplinary collaborations and their success rate in scientific and technical publications. The evaluation results show that students are highly satisfied with the language technology course based on the three-stage teaching concept, and they generally believe that this teaching method helps them quickly acquire the core skills of language technology. Student performance data also showed significant improvements in technical text writing, oral presentation and teamwork skills, which were validated in subsequent courses and projects. In addition, the ability improvement data show that students who accept the reform teaching show stronger ability in scientific and technological information dissemination and interdisciplinary communication, their participation in and contribution to scientific research projects are improved, and the quality of scientific papers published are also recognized by peers. Our teaching reform practice and effect evaluation show that the language technology

general curriculum reform scheme based on the three-stage teaching concept has achieved remarkable results in science and engineering universities. Students not only made great progress in language technology, but also significantly improved in interdisciplinary communication and innovative thinking. These positive changes strongly prove

The importance of language technology in science and engineering education also provides valuable teaching reform experience and reference for other science and engineering universities

Take the exam. The success of teaching reform practice not only optimizes the curriculum structure, but also has a positive impact on the overall quality of science and engineering education.

It has laid a solid foundation for cultivating well-developed scientific and technological talents.

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