

Research on the Cultivation of Writing Ability of General and Specialized Talents in Engineering during New Period

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Abstract: At present, most application-oriented undergraduate universities mainly focus on the cultivation of students' technical skills, but ignore the improvement of students' innovation ability, expression ability and writing ability. The proposal of engineering during new period requires the cultivation of talents to break the barriers of professional knowledge, cross professional training, and realize the integration of general and specialized education. The training of new engineering talents should be oriented by professional and technical ability, and have good writing ability, expression ability, group cooperation ability and lifelong learning ability. Based on the background of engineering during new period, this paper puts forward the cultivation method of writing ability of general and specialized talents. First of all, we should offer courses related to writing in general education. At the same time, we should build a comprehensive and diversified teaching team. Secondly, we should integrate writing into professional theoretical courses and practical courses. Finally, we should innovate the guidance method of graduation thesis writing, build an efficient and reasonable online guidance platform, and combine with the offline, improve the efficiency and quality of writing graduation thesis, test the final writing level of students.

1. Introduction

New engineering is different from traditional engineering in the key point of "new", its main ideas are reflected in the new idea, new structure, new mode, new quality and new system. In terms of talent training, colleges and universities should focus on the innovation of talent training programs from these aspects to achieve talents that meet the needs of modern social and economic development and society^[1]. Engineering education accreditation standard also calls for science and engineering students based on certain engineering background, have certain ability to analyze and solve problems, to team cooperation and effectively communicate, to write, report and oral expression, and have the ability of lifelong autonomous learning, etc.^[2].

2. The Necessity of Training the Writing Ability in Engineering during New Period

New engineering requires universities to cultivate talents and pay attention to writing ability and expression ability. The quality of writing ability is closely related to personal communication,

expression ability and discourse ability. Traditional engineering has low requirements on college students' writing, and there are even no courses related to writing in the whole college education stage. This mode of training talents' knowledge and ability weakness will be gradually exposed in social work, and the negative influence will be gradually strengthened. According to the investigation, many employers pay more attention to the students after entering the enterprise's individual work ability, rather than the academic performance of professional courses. In other words, the society attaches more importance to college students' ability of communication and expression, ability to analyze and solve problems and ability to respond to changes than their personal professional knowledge [3]. In fact, graduates of applied undergraduate majors do more work after entering the job, that is, communicating with others, sorting out manuscripts, summarizing and reporting, etc. The ability of communication and expression has become one of the abilities that employers attach great importance to contemporary college students [4].

Many foreign universities have set up "writing centers" or "writing laboratories", such as Harvard University and Stanford University, which use fixed course topics or multiple course topics to let students practice writing. Tsinghua University has set up a writing and communication teaching center, with more than 40 writing topics per semester, aiming to train students' thinking and writing and communication skills in different topics [5]. At present, most universities arrange writing related courses in the stage of general education, and professional education involves less writing. Some students' writing ability is insufficient, showing obvious language expression and inaccuracy in writing graduation thesis and social work. Therefore, the integration of general and specialized education in writing education needs to be further deepened.

3. Training Path of Writing Ability of General and Specialized Talents in Engineering during New Period

The cultivation of College Students' writing ability is a step-by-step process, not achieved overnight. Therefore, the cultivation of writing ability should be carried through the whole period of university study. In the general education stage, writing related courses are offered to cultivate students' basic writing ability. At the same time, a diversified team of teachers integrated with general education and professional education should be constructed to create reasonable writing schemes and themes and give corresponding guidance during the writing period. In the stage of professional education, students' thinking ability should be cultivated so that their writing ability can be given independent play and improved. Writing should be infiltrated into some professional courses and connected with general education, and make steady progress. Finally, the writing skills mastered by students can be applied to the writing of graduation thesis. In the graduation design stage, the writing ability of students can be tested and further improved, and the online platform can be rationally used to guide the graduation design work and improve the writing efficiency. To reduce the burden of students' graduation thesis writing and teachers' guidance. The specific promotion scheme is shown in Figure 1.

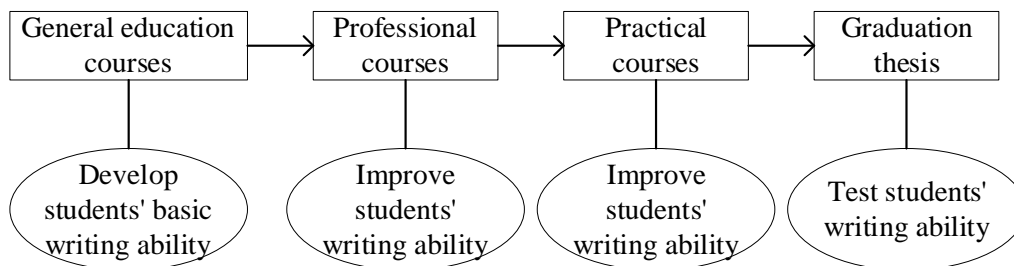


Figure 1: Writing ability training program

3.1. Set up General Education Courses Related to Writing, and Build a Comprehensive and Diversified Teaching Team

In the current era of science and technology, college students generally have less communication with the outside world after entering the university, and most of the communication depends on social software. In the lack of real communication environment, many students do not know how to express or say things ineffectively, and they are not interested in the communication in the real environment. At the same time, unlike early students, they need to take notes during study and write written homework after class, most college students can roughly complete these tasks through the Internet, and the writing opportunities are greatly reduced. This phenomenon directly leads to a large number of typos in some students' occasional writing, poor language expression, and poor thinking and writing ability. According to the training requirements of new engineering talents, writing courses are added to the curriculum system of general education, so as to instill writing knowledge to students and cultivate their basic writing skills^[6]. At the same time, general writing teachers can work with teachers of specialized courses to develop curriculum implementation plans, achieve cross-professional integration, build a diversified teaching team, and cultivate students with strong communication skills, language organization and writing skills.

In the construction of the teaching team, it is necessary to have a high standard, high quality, strict requirements, diversified and professional teaching team. Only in this way, the students can meet the various talent needs of the society. The construction of the teaching team should avoid the teachers of the same major, the same discipline and the same research direction. For example, the teaching team of different disciplines of general education and professional education can be constructed. Teachers in different disciplines have their own differences in humanistic quality, specialization level and education mode. When cultivating students' writing ability, teachers should give full play to their strengths, adapt to different students' learning ability and acceptance ability, identify students' differences, and guide and teach by categories.

3.2. Integrate Writing into Professional Theory Courses and Practical Courses

The cultivation of basic writing ability in general education can pave the way for the improvement of writing ability in professional education. Without changing the professional curriculum system, writing is integrated into professional courses. For example, some elective courses of automobile service engineering in our school require students to write course related papers for final examination. In such courses, the teacher will often limit the scope of the thesis writing topic, writing requirements and assessment points, etc., at the same time, you can use 1-2 hours to explain the thesis writing ideas and writing skills. In order to ensure the quality of the paper, students choose the topic and make an outline, and teachers give guidance and correction in the process. During this period, we should give full play to the role of the teacher team. Professional teachers determine the scope or topic of writing to meet the needs of professional education assessment, other teachers in the team can guide writing methods, writing ideas, etc. Secondly, we should pay attention to the writing tasks involved in the practical courses, because details determine success or failure. For example, in the course design of automobile marketing and planning, students are required to formulate a complete set of automobile marketing plan and express it in written form. The formulation of marketing plan requires preciseness, logical rationality and certain persuasion, it requires students' logical thinking ability and writing expression ability. Generally speaking, there are many hours for course design, so it is advisable to hire experts with rich writing experience to give guidance to students or give guidance to students in the form of lectures, so as to enrich the design content of automobile marketing courses and further improve students' learning interest and writing ability.

3.3. Innovate the Guidance Methods of Graduation Thesis Writing, Make Rational Use of Online Platforms, and Improve the Efficiency and Quality of Graduation Thesis Writing

The ultimate goal of cultivating students' writing ability is to hope that they can hand in a high-quality graduation thesis. At the same time, they can hand in written answers that satisfy leaders in the society and have better written expression ability. The writing quality of graduation thesis is the last key step to test students' writing skills. The writing of graduation thesis is time-consuming and heavy. Both students and instructors have certain pressure. At present, most teachers guide more students and spend a lot of time, and most students' thesis problems are similar. If the online teaching platform can be reasonably used to assist and provide guidance, it can get twice the result with half the effort. At the same time, online teaching platforms have the advantage of recording instructions so that some teachers and students do not forget them. For example, when using the online teaching platform to open the graduation design course, in addition to recording the guidance video, you can input text to give supplementary instructions to guide the graduation design process, and you can also select the previous excellent thesis cases for students to display and analyze uniformly. Common problems existing in the graduation project are uniformly recorded on the learning link platform, so as to avoid the trouble of repeated answers. Individual problems that can not be solved online can be transferred to offline answers. Through the combination of online and offline answering questions, it is helpful to avoid the anxiety and tension of students writing graduation thesis, and improve the efficiency and quality of graduation design writing.

4. Conclusion

Under the requirements of the "New Engineering" training program, the writing ability training of science and engineering students should run through all stages of general education and professional education. The cultivation of writing ability is reflected in the cognition of writing topic in the stage of general education, the accumulation of initial writing experience, the improvement of writing ability in the stage of professional education, the highlighting of writing logic and creativity, and the perfect presentation of graduation thesis in the stage of graduation design.

(1) In the stage of general education, the integration of general education and specialized education and the construction of a diverse team of teachers are very important. Clarifying the division of teachers' responsibilities and building a reasonable writing curriculum plan are the key to the success of writing education. Teachers of general education courses are in the lead, and professional teachers are auxiliary to build a team of teachers from different disciplines. Teachers are responsible for the implementation of writing plans and tasks, and students should be given feedback during the writing process. Ensure that each student has a basic understanding of writing and can complete the basic writing tasks.

(2) In the professional education stage, the teachers of professional courses take the lead in arranging the writing plan, writing scope and theme, and the teachers of general courses give auxiliary opinions. During the course implementation, teachers should communicate with students more, collect students' cognition and thinking about professional writing, inspire students' ideas and ideas, and promote students' writing content to be innovative or practical when it meets the basic requirements.

(3) If the writing ability of students has been improved in the stage of general education and professional education, and they can complete the writing task independently, then during the writing of graduation thesis, it will reduce the burden for teachers and students at the same time, and the quality of graduation thesis is guaranteed. Graduation design working hours is long and tedious, if we can make reasonable use of online and offline mixed guidance teaching, we can get twice the result with half the effort.

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