

Reform and Practice in Teaching Literature Review and Scientific Writing Course with the Goals of "Leading and Applicability"

Nan Wu, Xinyuan Liu, Jinxing Peng and Li Wang *

College of Engineering and Technology, Tianjin Agricultural University, Tianjin 300392, China

* Corresponding author: Li Wang

Abstract: Literature study and scientific paper writing for leading and applicability aims to enhance the capability of students in literature review and scientific paper writing through teaching reform and practice. The course design emphasizes leading and applicability, and cultivates independent analysis and critical thinking through in-depth academic literature reading and actual scientific and technological thesis writing. Through the teaching content, teaching methods, and assessment methods, we explore the role of leading teaching in promoting academic exploration and application transformation. Students not only demonstrate innovation and foresight in academic research but also show the ability of technology transformation in practical application, laying a solid foundation for future academic and professional career development.

Keywords: Applicability; Scientific Writing; Postgraduate Training; Literature Review.

1. Introduction

With the increasing development of higher education, it has become an important mission of education to cultivate the innovative spirit, scientific research ability, and practical application ability of students. In this context, new requirements have also been put forward for the education of graduate students [1]. As an important level of talent cultivation, graduate education is responsible for training high-level and high-quality talents. Academic research is an important part of graduate education. Graduate students, as an important group of scientific research, have gradually become the main body of scientific and technological dissertation journals, and the level of graduate student scientific and technological dissertations to a certain extent reflects their own theoretical knowledge and comprehensive quality. Under the condition of rapid development of science and technology, the tutors should play a prominent role and look for various ways to improve the quality of postgraduate training, in order to better send qualified talents to the country.

The course "Literature Review and Scientific Writing" is one of the most important courses for graduate students in many universities in China, aiming at cultivating the ability of graduate students to carry out literature searches, reading, and handling and processing of literature and information. The course can provide students with a favorable tool for the successful completion of extracurricular scientific and technological academic competitions, thesis writing and publication, courses, and thesis [2].

Traditional literature study and scientific writing courses tend to focus on the teaching of basic knowledge and the development of academic writing skills while neglecting the development of leading thinking and application skills. Therefore, it is especially important to offer a course that combines leading and applicability. We must deeply recognize its significance and far-reaching impact in promoting teaching reform and practice. This is not only a useful supplement to the traditional mode of academic education, but also an effective exploration and practice of

cultivating modern high-quality talents.

Applying the research results of this topic to teaching can enable students to correct their attitude towards scientific research. The students can have a more comprehensive knowledge of scientific research, and master the methods of literature search and research, as well as the structure of scientific and technological dissertations, norms and techniques. The course can cultivate the ability of students to analyze and solve problems and think creatively. It not only meets the needs of students for specialized knowledge and skills, but also conforms to the current trend of teaching reform in higher education.

2. The Current Status and Problems in Teaching the Course

At present, Chinese postgraduate education is in a stage of rapid development, and the growth in the number of postgraduates has also put forward new requirements for postgraduate education. Graduate students are an important reserve force for the progress of science and technology and the development of higher education in China, and literature study is an important part of graduate student training. Since the opening of the literature study course at Shanghai University in 2002, Renmin University of China, Tsinghua University, Southwest University, and many other universities in China have opened the literature study course one after another, which breaks the traditional teaching situation of the lecturer and passive acceptance of the students. The cultivation program for master's degree students of Southwest University explicitly requires that the graduate students should study the main literature of their disciplines and specialties, including academic research papers, classic books, and major journals in their disciplines, and fill in the record of the main literature reading report and submit it to their supervisors for review. Academic research papers, classic books major journals, etc., fill in the record of major literature reading report and submit it to the supervisor for review. However, some colleges and universities still do not pay attention to cultivating graduate study ability, only some

colleges in the undergraduate stage of the literature retrieval as professional elective courses, and the graduate stage of the curriculum is still based on professional theory courses.

Students who move from undergraduate to graduate school often fail to adapt to the change in learning paradigm, retaining the passive learning attitudes of faculty members who "fill in the blanks"[3]. Undergraduate students just entering graduate school often lack literature research skills, centered on: (1) low awareness of proactive literature acquisition; (2) insufficient ability to search and utilize literature; (3) insufficient sensitivity to literature; (4) low ability to analyze and effectively use literature to solve academic problems. Poor independent thinking and practical ability, lack of problem awareness, and research consciousness have become the characteristics of many postgraduates. In the long run, this will not only affect the academic career of graduate students; but also hurt their physical and mental health.

The objectives and mode of training of graduate students are fundamentally different from those of undergraduates. At the stage of postgraduate training, it is necessary to give full play to the subjective initiative of postgraduates, to establish and improve the system of postgraduate literature study, to cultivate the independent research ability of postgraduates, and to carry out this exercise throughout the whole process of postgraduate training. After guiding graduate students to quickly enter the role of scientific research workers, constantly motivate graduate students to discover new problems in the process of studying the literature, think independently, expand the problems with their perceptions, put forward solution ideas and solutions, and improve the scientific research ability of graduate students.

3. The Curriculum Research Process with the Goal of Leading and Applicability

Leading: Aim to develop an awareness of the academic frontiers that will enable students to follow and keep abreast of the latest research developments.

Applicability: Focusing on practical application and cultivating the ability of students to apply theoretical knowledge to actual scientific research.

To achieve the goal of the course to be more leading and applied, this project will research the teaching content, teaching methods, and assessment methods (Fig. 1) to deepen the teaching reform and practice of the course.

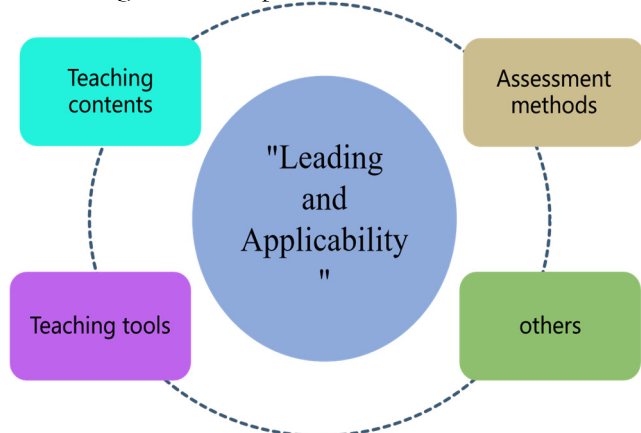


Fig 1. Curriculum studies with leading and applicability goals

First of all, in the design of teaching content, take the problem-oriented as the starting point, carefully design the modular structure of the course content, and make clear the theoretical background and key skills involved in each module. At the same time, common learning difficulties are predetermined and targeted teaching arrangements are made to enhance students' sense of learning objectives and the sense of direction of teaching and learning of teachers.

Secondly, focusing on the integration of curriculum ideology and politics, especially on how to effectively convey socialist core values in professional courses, promoting the internalization and recognition of students' ideological and political education through the innovation of actual teaching methods and modes, and further enriching the teaching of professional knowledge.

In addition, in the choice of teaching tools, full use is made of multimedia and online education tools, as well as personalized learning approaches, to meet different learning needs and technological advances and to create a more effective and interactive learning experience for students.

Finally, in the setting of assessment methods, diversified forms are adopted to comprehensively assess student's mastery of course content and optimize the quality and effectiveness of teaching by stimulating learning and enhancing motivation. The assessment process will also serve as an important feedback mechanism for teachers to optimize their teaching design and methods to continuously improve the quality and standard of education and teaching.

4. Exploration and Practice of Course Teaching

As an important level of talent cultivation, graduate education is responsible for cultivating high-level and high-quality talents. Academic research is an important part of graduate education. Graduate students, as an important group of scientific research, have gradually become the main body of scientific and technological dissertation journals, and the level of graduate student scientific and technological dissertations to a certain extent reflects their theoretical knowledge and comprehensive quality. With the rapid development of science and technology nowadays, to better send qualified talents to the country, we should also look for various ways to improve the quality of graduate training. Measures are mainly taken in the following areas to cultivate professionals with strong practical application ability, comprehensive knowledge, and interdisciplinary skills, providing society with more valuable human resources and promoting the sustainable development of society.

4.1. Rationalize Course Content to Enhance Applicability

When designing the curriculum, teachers first ensure the scientific and cutting-edge nature of the course content through extensive collection of relevant information. Then, according to the actual needs of students and teaching objectives, the course content is appropriately cut down, redundant parts are removed, practical courses are retained, and the applicability of the course is enhanced. Fig. 2 shows the distribution of major parts in this course.

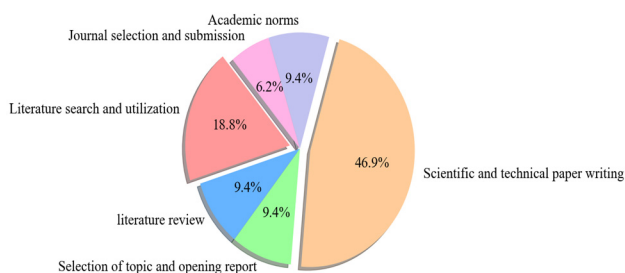


Fig 2. Distribution of course content

In teaching, teachers should pay attention to the practical application of the course and the students as main body of practice. Teachers should explore the method of student learning initiative, to enhance the leadership and applicability of the course. So we must focus on the main position of the students. The traditional classroom teacher-oriented, using "teachers speak, students listen to the" knowledge transfer type of delivery mode, ignores the main position of the students. Single teaching method, dull classroom atmosphere, low degree of communication and interaction, and weak student participation, are unable to fully mobilize learning initiative and enthusiasm of students, confining the development of innovative thinking of students. With students as the main body and teachers as the guide, it can well stimulate the initiative of students, mobilize the enthusiasm of students to participate in the course and cultivate the learning spirit of student active thinking and exploration [4].

When teaching the content of literature and information, teachers can introduce the relevant knowledge of information ethics and information literacy, so that students can establish a correct information awareness, and cultivate the concept of information ethics and the concept of information legal system. At the same time, when teaching thesis writing and academic norms, teachers can introduce relevant cases to guide students to recognize the importance of academic ethics and the harm of academic misconduct and cultivate standardized academic ethics among students.

4.2. Integrating Online and Offline Teaching to Enhance the Learning Experience

To ensure the quality of teaching and enhance the teaching experience, teachers adopt a combination of online and offline teaching modes. In the classroom, multimedia presentations enable students to visualize and understand the course content. After class, distribute materials and assignments through online tools such as WeChat and learning platforms to promote independent learning among students. In addition, teachers can fully communicate with students through the online platform, answer the questions of students, promote the collision of students' thinking, and form a good learning atmosphere. This combination of online and offline teaching mode not only improves the flexibility and interactivity of teaching but also enhances the learning experience of students so that students can learn something.

4.3. Focus on Practical Assessment to Develop Essay Writing Skills

Dissertation writing is a highly practical course, and the instructor requires students to write a review paper in conjunction with their research interests in the final

assessment as a way to test the learning outcomes of the students. Throughout the learning process, the teacher focuses on student motivation and autonomy and increases student participation through classroom discussions, question-and-answer sessions, etc. In particular, a PPT reporting session was set up, in which students were required to make a PPT of the synthesis paper they had written and report on it in small groups, with one representative from each group explaining it in class, and the reporting time was 5 minutes. Teachers make comments from the perspectives of format standardization, structural rationality, scientificity, and academics so that students can make clear the main problems and precautions in thesis writing. Through this kind of practical writing and deep thinking, students have initially mastered the skills of dissertation writing and laid a solid foundation for future academic research.

The students are cultivated to acquire the ability to collect, organize, process, and utilize literature and information, and initially form the awareness and concept of using literature resources responsibly. So graduate students can improve their ability to study and apply literature, deepen their understanding of their majors and disciplines, master the standardized research methodology for the direction of scientific research, and follow up on the latest research results [5]. This facilitate the successful completion of their graduation dissertations or periodical theses. Breaking the traditional teaching method, with the goal of "leading and applicability", through systematic learning, comprehensive mastery of literature search, and scientific and technological essay writing methods, for the future to work or further study to lay a solid foundation.

5. Summary

As there is a growing demand for top-notch, applied, and innovative talents in society, a curriculum that aims at "leading and applicability" can better meet this goal. Exploring the role of lead teaching in promoting scholarly inquiry and translational application through curriculum, pedagogy, and assessment. A systematic and comprehensive course can not only enhance the academic level and scientific research ability of individuals, but also promote academic exchanges and the transformation of scientific research results, which has significant promotion value. This course cultivates more scientific research talents with innovation and practical application ability, and makes greater contributions to the development of the academic community and society. In the future, the course content should be further optimized, more practical cases should be introduced, and teacher-student interaction should be strengthened to continuously improve the quality of the course and the teaching effect.

Acknowledgments

This research was supported by Graduate education teaching research and reform project of TJAU (2023-YB-025).

References

- [1] Han A-Wei. Reflections on Improving the Quality of Graduate Student Training[J]. Heilongjiang Education (Research and Evaluation of Higher Education), 2013(No. 3), p. 17-18.
- [2] Xie Xiaoyu, Wang Longchang. Exploration and Practice of Teaching Methods of Main Literature Study Course for

- Graduate Students[J]. Journal of Southwest Normal University (Natural Science Edition), 2016, Vol. 41(No. 3), p. 222-227.
- [3] Wang Nan, Li Yang, Jia Jinzhong, et al. Survey on the current situation of practice teaching and countermeasures of full-time public health master's degree graduate students[J]. Chinese Journal of Medical Education, 2020, Vol. 40(No. 3), p. 205-209.
- [4] Liang Zhihong, Peng Mengxue, Jing Gao. Exploring the teaching reform of graduate Seminar "Literature Reading" course by integrating flipped classroom[J]. Agricultural Product Processing, 2021(No. 8), p. 85-89.
- [5] Xia Jigang, Fu Shijian, Cao Zhendong, et al. Discussion on the reform of the cultivation mode of academic master's degree students with the core of enhancing scientific research literacy[J]. Anhui Agricultural Science, 2015, Vol. 43(No. 25), p. 384-385+388.