

A Study on the Sources of Undergraduate Thesis Topics — Taking Harbin University as an Example

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ABSTRACT

In this research, we study the undergraduation theses of class 2023 (156 theses) and 2024 (167 theses) from the Primary Education program of Harbin University. Systematically, we analyse the distribution characteristic and the practical value based on the two mainly topic sources: instructor-assigned topic and student-proposed topic. The results show that instructor-assigned topics accounted for 60.1%, student-proposed topics made up 39.3% in class 2023; but instructor-assigned topics dropped to 18.2%, student-proposed topics rose sharply to 67.3% in class 2024, which means a significant change of the autonomy to the students. To combine the needs with employment orientation and the cooperation between university and community, we reconstruct the topics into three types: employment-adaption, university-community-cooperation, and career-development. We also propose three dimension optimization ways—"employment anchoring, university-community synergy, and academic empowerment" to provide reference for enhancing thesis quality and the employment competitiveness of normal university students.

Keywords: Primary education major, Graduation thesis, Topic sources, Employment orientation, Cooperation Between University And Primary School .

1. INTRODUCTION

Undergraduate thesis is an important vehicle to assess the professional competence and research capabilities of normal university students. The rationality of the topic selection directly affects the autonomy, innovation, and the practical value of the thesis. With the deepening of the "student centered" educational philosophy and the advancement of basic education reform, the traditional model that teacher lead to select topic can no longer adequately meet the demands of employment market or the development of university-community cooperation. The primary education major of Harbin University is a national first-class major, research on the sources of thesis topics not only helps the normal university students review and integrate their professional knowledge and practical experience systematically during four years, thereby they can construct a complete knowledge system, but also enables instructors to know students' actual learning conditions and academic foundations accurately, so they can provide the normal university students with

targeted guidance. Thus, we hope this study holds practical and reference value for improving thesis quality and the development system for normal university students.

2. PRESENT RESEARCH STATUS IN CHINA AND ABROAD

Chinese and foreign researches provide a rich theoretical basis and practical experience for the topic selection of undergraduate thesis, but there are still some deficiencies. Foreign research pays more attention to individuality and practicality, but whether it is adapted to the Chinese educational context needs to be verified. Chinese research mostly focuses on the analysis of the current condition and the proposal of problems, while the research on the deep mechanism and dynamic changes of the topic sources is insufficient, and the discussion about the optimization path of topic selection is very few, especially about the multi-perspectives of skill improvement, employment orientation and cooperation between university and primary school

3. THEORETICAL BASIS OF THE RESEARCH

3.1 Constructivism

Constructivism posits out that, based on the existing cognitive frameworks, learning is an process by which learners construct knowledge actively through interactions with the environment. This theory pays attention to the central role for students and the ability for autonomy inquiries , which can provides important guidance for the selection of topic . When they prepare to select topic, normal university students should integrate their practice experiences, personal interests, and knowledge together and pose problem actively, rather than passively accept topics assigned by instructors. Furthermore,instructors should act as a guide, and help students to organize their thoughts and understand their research directions. For instance, if a normal university student finds a problem, that the reading resource is not enough at the basement primary school, during his or her internship,he or she can select a topic such as "Research on Strategies for Developing Reading Resources in Rural Primary Schools" under the instructor's guidance, which may make the research more targeted and practical.

3.2 Career Development Theory

Career development theory holds that the formation of an individual's career abilities is a progressive process through practical training and systematic cultivation gradually. The core professional abilities for primary education major include teaching design, classr management, and home-school communication, etc. So the thesis topics should be closely connected with these core abilities. By selecting topics related to professional skills, normal students can deepen their comprehension and application of career skills during the research process, which is helpful for them to prepare themselves for employment. For example, a normal student may select the topic "Research on Strategies for the Cultivation of Class Rule Awareness of Primary School Students in Lower-Grade", then he or she can simulate real teaching scenarios during the research, and make

outcomes which can be directly applied to job interviews, furthermore, effectively enhance their competitiveness.

3.3 Theory of Cooperation Between University And Primary School

Theory of cooperation between university and primary school emphasizes that higher education institutions and local primary schools should develop normal students collaboratively, through sharing resources and complementary advantages we try to make the development of normal students meets the need of society precisely. During the process of the thesis topic selection, the cooperation between university and primary school may provide normal students with real teaching contexts and research issues, which can make topics more practical and targeted. The cooperation between university instructors and primary school teachers ensures both the academic and practical needs of the topics, which is helpful to improve the quality and application value of undergraduate theses. For example, a project on "Mental Health Intervention for Left-Behind Children" may be proposed by both university and primary school collaboratively, so normal students can collect real data, put forward some strategies, and the research results can be directly applied to school practices, meanwhile they can accumulate valuable practical experience for their future careers.

4. RESEARCH PROCESS

4.1 Classification Criteria for Research Topics Sources

We uses 323 valid undergraduate thesis samples from primary education major of Harbin University for this study, including 156 from class2023 and 167 from class 2024. All the thesis samples cover the directions including Chinese, mathematics, and integrated subjects. The data is authentic and reliable. Based on documents such as the Harbin University Undergraduate Thesis Management Measures, we make a theoretical framework for classification .("Table 1")

Table 1. Classification criteria

Category	Definition and Criteria
Instructor-Assigned Topics	The topic is directly assigned by the instructor, usually concerned with their research projects, teaching programme, or research direction, students have little autonomy and they just accept and execute the assignment.
Student-Proposed Topics	The topic is independently proposed by students, which is based on their teaching practice, personal interests, or reading accumulation. and conformed by instructor finally, which means strong autonomy.

4.2 Distribution and Trend Analysis of Topic Sources

4.2.1 Overall Distribution Data of Topic Sources

Compare the change of quantity and proportion in instructor-assigned and student-proposed topics between class 2023 and class 2024 at Harbin University, we analyze the reason for the change of trend. ("Table 2")

Table 2. Data of topic sources

Topic Sources	2023 Cohort	Percentage	2024 Cohort	Percentage
Instructor-Assigned Topics	94	60.1%	30	18.2%
Student-Proposed Topics	61	39.3%	112	67.3%
Source Not Clearly Stated	1	0.6%	25	14.5%
Total	156	—	167	—

4.2.2 Trend Interpretation

4.2.2.1 The Proportion of Student-proposed Topics Increased Significantly

The proportion of student-proposed topics increased from 39.3% in class 2023 to 67.3% in class 2024, which shows an obviously strengthen of students' autonomy awareness in topic selection. Such Typical topics as "Research on Design of Mathematics Homework Based on Game for Lower Grades Under the 'Double Reduction' Policy" and "An Study on the Impact of Reading Picture Book on Students' Ability of Emotional Regulation in Elementary School ", both reflect students' active observation and critical thinking about educational issues in real world. This change is closely concerned to the "centered on students" educational reform in Harbin University recently. We set up course to construct student how to select topic, encourage students to take part in research

project, which have strengthened students' research abilities and autonomy.

4.2.2.2 The Proportion of Instructor-assigned Topics Declined Significantly

The proportion of instructor-assigned topics decreased from 60.1% to 18.2%, which indicated that the number of assigned topics are gradually reduced to avoid the lack of research motivation caused by students' short of interest. However, some research-oriented instructors, who still work in the old way, should pay attention to the adaption with their students' individual needs. For instance, some instructors assigned subtopics of their own research projects to students, which ensures the academic of the topics but may disconnect from personal interests and career development .

4.2.2.3 The Proportion of Topics Without Specified Sources Increased

The proportion of topics without specified sources increased from 0.6% to 14.5%. This may be caused by the frequent interactions between teachers and students during the process of topic selection, which makes it difficult to define the source of the topics clearly. This change means a shift in the current models of topic selection, from a "duality" toward "multi-collaboration", which shows the boundaries between teachers and students in the process of topic selection are becoming blurred.

4.3 Problems in Topic Sources

4.3.1 The Depth of Topics Adapted to Employment Is Not Enough

Some students simplified their topics into "summaries on the job application skill", such as *Research on Strategies for Questions and Answers in The Interview of Primary School Teachers*. Such topic is short of theoretical support and practical verification, so it is not helpful to improve professional ability. Additionally, such topics are so broad as *Research on Strategies of Class Management in Primary Schools*, which is not combined with specific subjects or grades, resulting in the lack of specific and practicability of the research outcomes.

4.3.2 The Collaboration of the Topics on University-Primary School Cooperation Needs to Be Enhanced

Some topics on university-primary school cooperation are still selected by such ways as that university instructors raise questions, and get assist from primary school. Because of the insufficient participation of the frontline teachers, the research outcomes are disconnected from practical needs. For example, the topic *Research on the Development of Science Curricula in Primary School Based on Core Competencies*, which is proposed by instructors who did not deeply know the real teaching conditions in primary school, is difficult to implement in practice.

4.3.3 The Innovation of Topics in Career Development-oriented Is Insufficient

It is a easy way for normal students to follow hot topics blindly, such as "Double Reduction" or

"AI in Education". This leads to a result that when they choose the topics, they neither think it over deeply nor study it from an innovative perspective, so the topics homogenization is becoming severe. For instance, there are 12 theses concerning with *"AI-Assisted Teaching"* in class 2024, yet most of them merely are about the description of situations or theoretical analysis, while the practical and applied value are not enough.

4.4 Analysis for Practical Classification and Value of Topic Sources

In order to be helpful for both employment of normal university students and promoting cooperation between universities and primary schools, we reconstruct the sources of topic into the following three categories:

4.4.1 Targeting The Core Requirements for Teachers Job

This type of topics directly targets the core competency requirements of primary school teachers job, focusing on key skills such as teaching, management, and communication, which can help normal university students to familiarize the job conditions and improve the employment competitiveness.

We get some example topics include: *Research on Strategies for Transition between Kindergarten and Primary School*; *Study on Chinese Homework Design for Different Level Students for Primary School under The Double Reduction Policy*; *Investigation into Situation Teaching Techniques in Simulated Teaching in Primary School English*.

During their research, normal university students need to accumulate their experience of simulated teaching, understand the real teaching situation, get the outcomes which can be used in their job interviews, so they can increase employment competitiveness.

4.4.2 Building A Bridge for Cooperation Education Between University And Primary School

This kind of topics is based on the cooperation platform between universities and primary schools, changing real teaching problems into research projects, which can not only serve primary school education practice but also promotes precise integration between the development of normal students in higher education and the needs of basic

education. Sample topics include "Research on Optimization of Curriculum for After-School Care Under the 'Double Reduction' Policy", "Design of Programs for the Mental Health Intervention for Left-Behind Children", and "Research on Development for Science Curriculum Based on Project-Learning in Primary School". The outcomes of these research may provide feasible strategies for primary schools, and may also help normal students to accumulate practical experience when they solve real teaching problems. Some students directly got hired by partner primary schools just because they have done very well in their study deeply.

4.4.3 Empowering Long-term Professional Development

This type of topics focus on frontier trends in education and the needs of career development for teachers, developing normal university students research awareness and innovation ability, which is helpful to lay the foundation for them to become research-oriented educators or educational manager. Sample topics include "A Study on the Application of AI-Assisted Teaching in Mathematics Class in Elementary School", "Design for Integrated and Practical in Mathematics Under the Guidance of Core Competencies in Primary School" and "Research on Teaching of Integration of Chinese and Art form An Interdisciplinary Perspective". The normal students who choose these topics need to have strong skills for literature review and logical analysis, which can help lay the foundation for further academic research.

4.5 Optimization Strategy Recommendations

4.5.1 Building an System of Guidance for "Employment-Targeted" Topic

4.5.1.1 Developing a Topic Bank for Professional Competence

We need to collaborate with principals and departments of teaching research, then we should pay attention to skills such as teaching design, class management, and communication between home and school, which are important in the interview for teachers job. Examples topics include *Research on Optimization of Teaching Design Based on Interviews for Teacher Qualification* and *Case Analysis and Concerning Strategies for The Work of Head Teacher in Primary School*. The topics

bank should be updated regularly, adjusted the topic directions based on educational policies and the demands of employment market.

4.5.1.2 Implementing "Employment and Research" Dual-Instructor System

Each normal student gets two instructors, one research instructor from university who needs to help students how to perform the research, one instructor from primary school who needs to support simulated situation for employment and the assessment of profession ability. Both the two instructors take part in the selection of the topics, which ensure the academic rule of the topic and needs for the employment.

4.5.2 Deepening the Collaboration Mechanism for the Topics on "University-Primary School Cooperation"

4.5.2.1 Establishing a "Solving Problems Together and Sharing Outcomes Together" Model

Researchers hold "teaching problem seminars" with cooperating primary schools each semester to identify research topics together, such as *Research on Mental Health of Left-Behind Children in Primary Schools*. The outcomes will be directly applied to school practice, meanwhile it can be used as a criterion for evaluating normal students' practice performance. Universities should provide primary school teachers with research guidance and training to improve their ability in topic selection.

4.5.2.2 Establishing a Special Fund for "University-Primary School Cooperation Topic"

Good university-primary school cooperation topics should support with suitable funds, which encourage normal students to perform long term study in primary school, furthermore make it a "research-practice-employment" circle. The funds can be used for research and investigation, data assembly, device collection, which ensure the research carry out smoothly.

4.5.3 *Building an Advanced Way for Topics on "Academic Empowerment"*

4.5.3.1 *Offering a Series of Courses for*

"Topics Advanced"

The courses, such as "Design for Employment-Oriented Topic", "Research Methods for Cooperation Between University And Communication ", and "Exploration for Academic Frontier Topics", should be offered gradually from junior year. All the courses can help to guide students to select suitable research topics according to their individual development. These courses could be carried out in such ways as case teaching and group discussions, which can improve students' abilities for topic selection and innovative awareness.

4.5.3.2 *Establishing a Dynamic Mechanism of Adjustment for Topics*

The types of topics should adjust according to students' personal interests and needs during the research process, which may provide development space for normal students' personality. Instructors should regularly communicate with students to understand the development and need for research, and offer guidance and support on time.

5. CONCLUSION

Based on graduation theses of class 2023 and class 2024 from Primary Education major of Harbin University, we analyzed the distribution characteristics and the developing trends of topic sources systematically, and found a significant increase of student-proposed topics and a notable decline of instructor-assigned topics, which showed an obvious improvement of autonomy of students. Combining the needs of employment orientation with university-community cooperation, we reclassified the topics into three types: employment-adaption, university-communication cooperation, and career-development-oriented, which reveal the distinct practical value of each type. Despite students' autonomy get improved, problems exist yet, such as some topics are not deeply enough, and some topic lack innovation. To solve these problems, we need to be instructed by policies, instructors should be empowered, students should get aware, and the topics environment should be more open,multiple and practice practice-oriented, and make the core value "cultivating

through research" fully realized. The further research could combine with interview, which is used to explore students' psychological experiences and engagement into the three topic types. Besides, we can also compare the difference of topic mechanisms between institutions to provide more evidence for policy refinement.

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