

# Research on Full-Time Master of Mathematics Education Candidates' Cognition of Dissertation

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## Abstract

This research focused on the cognition of full-time candidates of master of mathematics education to their dissertation, and adopted open-ended structure questionnaire. There were 94 participants from 11 normal universities in Mainland China. The questionnaires were sent to them by e-mail. The results indicated the majority of candidates thought: 1) The dissertation was a paper with rational structure (78.38%); 2) The characteristic of good master dissertation was that its view was usually original (71.62%) and valuable and its content was rich (64.85%); 3) Reading more relevant literature to understand research status (98.65%) and learning more fundamental theories (75.68%) was necessary before writing dissertation; 4) They should refer the form of relevant dissertation usually when writing dissertation (72.97%). So it was obvious that many candidates' cognition about dissertation and its preparing and writing was quite superficial, some of them were even false.

## Keywords

Mathematics Education, Master of Education, Candidates, Cognition, Dissertation

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## 1. Introduction

Due to having many serious problems, the quality of dissertation of full-time candidates of master of mathematics education was always not high these years in Mainland China [1]. This situation has got the wide and high attention of many educators, and a series of researches has been made and many results have been obtained by now, such as Yang Qiliang thought its reason was mainly the unreasonable arrangement of supervisors and lack of standard [2]. Li Gaofen and Yang Zupei argued its reason was mainly the insufficient learning and practicing

about research methods [3]. Zhang Dingqiang claimed its main reason was the imperfect cultivation system [4]. However, by reviewing these studies, it can be easily found they all are almost based on the author's teaching experience and their reasoning, while the study which is based on the investigation to candidates does not appear yet at present. Indeed the investigation study is necessary and important to find the real reason, so we investigated the cognition of full-time master of mathematics education candidates. We believe the cognition of these candidates can profoundly and extensively influence their writing of dissertation, because modern psychological researches had revealed that people's cognition could influence their behavior directly, what kind of cognition the people had, then they would have what kind of behaviors correspondingly.

## 2. Methodology

### 2.1. Instrument

To find out the candidates' real thoughts extensively and deeply, we adopted open-ended structure questionnaire on the base of the relevant questionnaire. Our questionnaire questions are related to (a) the cognition about master degree dissertation, (b) the cognition about good master degree dissertation, (c) preparing for the master degree dissertation, (d) the writing of good master degree dissertation.

### 2.2. Participants

We chose 94 full-time candidates of master of mathematics education randomly from Dongbei normal university, Beijing normal university, Shandong normal university, Nanjing normal university, Huanan normal university, Anhui normal university, Fujian normal university, Sichuan normal university, Shanxi normal university, Huaibei normal university and Qufu normal university. They all were freshmen of postgraduates majoring in mathematics education, including 68 female candidates and 26 male candidates. The questionnaires were sent to them by e-mail. We asked them to send back in two weeks.

### 2.3. Data Collection

We recalled 87 questionnaires two weeks later and checked them according to the following two criteria: a) all questions were answered; b) all answers are consistent and complete. We obtained 74 effective questionnaires finally.

### 2.4. Data Analysis

Since our questions are open-ended, we analyzed answers with software Nvivo 10 at first, then calculated the percentages of every statements obtained by software Nvivo 10. All answers were analyzed through these percentages.

## 3. Results

### 3.1. The Cognition about Master Degree Dissertation

After analyzing with software Nvivo 10, we obtained totally 19 different statements on master degree dissertation. The statements which its holders are more than 5% are shown in **Table 1**.

From **Table 1** we know the majority (78.38%) of candidates thought the dissertation was a paper with rational structure, more than a half candidates thought the dissertation was a paper with rich content and enough number of words, only a little part (less 10%) of candidates thought that the dissertation should be a paper with a analysis of a problem and some reasonable methods.

### 3.2. The Cognition of Good Master Degree Dissertation

We obtained totally 27 different statements on good master degree dissertation through analyzing with software Nvivo 10. The statements which its holders are more than 5% are shown in **Table 2**.

As **Table 2** shown, the majority (71.62%) of candidates thought the characteristic of good master dissertation was that its novel views were usually. More than a half (64.85%) of candidates thought the characteristic of good master dissertation was that its view was valuable and its content was rich. More than one forth candidates

**Table 1.** The cognition of dissertation.

Statements	Number of candidates (The total is 74)	Percentage (The total is 74)
A paper with rational structure	58	78.37838
A paper with rich content and enough number of words	43	58.10811
A paper with new title	24	32.43243
A paper with standard form	21	28.37838
A paper which of academic value	16	21.62162
A paper with clear views	15	20.27027
A paper with systematic content	14	18.91892
A paper submitting a scientific research	11	14.86486
A paper which has a analysis of a problem	7	9.459459
A paper which includes reasonable method	5	6.756757

**Table 2.** The cognition of good dissertation.

Statements	Number of candidates (The total is 74)	Percentage (The total is 74)
A paper with novel views	53	71.62162
A paper with greater academic value	48	64.86486
A paper with richer content	46	62.16216
A paper with good arrangement of chapters	19	25.67568
A paper which includes reasonable method	16	21.62162
A paper with rich theory	11	14.86486
A paper which has many research methods	10	13.51351
A paper with standard form	9	12.16216
A paper which has novel title	7	9.459459
A paper which can be published on academic journals	4	5.405405

thought the characteristic of good master dissertation was its quite reasonable arrangement of chapters was.

### 3.3. The Cognition of Preparing for Master Degree Dissertation

We obtained totally 18 different statements on preparing for master degree dissertation after analyzing with software Nvivo 10. The statements which its holders are more than 5% are shown in **Table 3**.

As **Table 3** shown, almost all (98.65%) candidates thought reading more relevant literature to understand research status was necessary before writing dissertation. The majority (75.68%) of candidates thought they should learn more fundamental theories. Only 16.22% candidates thought they should learn more research methods.

### 3.4. The Cognition on How to Write a Master Degree Dissertation and the Principles

Related to how to write a master degree dissertation and what principles should follow, we totally obtained 28 different statements. The statements which its holders are more than 5% are shown in **Table 4**.

From **Table 4**, we know the majority (72.97%) of candidates thought they should refer the form of relevant dissertation usually when writing dissertation. About one third candidates thought they should investigate in

**Table 3.** Statements on preparing for dissertation.

Statements	Number of candidates (The total is 74)	Percentage (The total is 74)
Reading more literature to understand research status	73	98.64865
Mastering more fundamental theories	56	75.67568
Preparing title earlier	19	25.67568
Learning the form of dissertation	16	21.62162
Learning more research methods	12	16.21622
Discussing with supervisors and classmates	8	10.81081
Improving the ability of words expression	5	6.756757

**Table 4.** The cognition on writing dissertation.

Statements	Number of candidates (The total is 74)	Percentage (The total is 74)
Referring the form of relevant dissertation usually	54	72.97297
Investigating in-depth	28	37.83784
Determining a appropriate title	23	31.08108
Asking teachers usually	19	25.67568
Combining practice closely	19	25.67568
Revising patiently	9	12.16216
Discussing with classmates usually	8	10.81081
Having a whole writing program	7	9.459459

depth, about one fourth candidates thought they should ask supervisors and combine the mathematics teaching practices. Only about one tenth candidates thought they should make a detailed writing program when they started their dissertation.

#### 4. Discussion

Based on the results above, majority of candidates pay more attention to the external form of master degree dissertation, such as the richness of content, standardization of form, rationality of arrangement of chapters and the novelty of title. They thought the above were the essential factors of a master degree dissertation. They seldom mention the research work which is related to the dissertation, especially the relevant demonstration of argument and the research methods. So the present candidates' overall cognition on master degree dissertation is relatively superficial, some of them even are inaccurate and false. The master degree dissertation definitely needs standardization of form, rationality of arrangement of chapters and the novelty of title [5], however, they are absolutely not essential. Besides most candidates' cognition on master degree dissertation has obvious loopholes, they do not recognize the essential factors of appraising dissertation's quality are the researches submitted in the dissertation and the author's demonstration of argument yet.

Most candidates thought that reading more relevant literature to understand research status, learning more fundamental theories and having a good title were necessary when they prepared for their dissertation. Almost no one recognized that a deep research was considerably important for preparing for their dissertation. We cannot claim the candidates' cognition on preparing for their dissertations are false completely, however, they obviously did not recognize the relationship of research work and dissertation and not understand the general procedure of preparing for a dissertation yet. Since if they had recognized that, they must pay special attention on research works and do some research work when they prepared for their dissertation and before writing.

Concerning the factors which should be paid attention to in process of writing dissertation, most candidates still emphasize the standardization of form, so undoubtedly the external shape is their first priority. Almost no one recognized it was necessary to present research method, process and result unambiguously and completely and in order when they wrote dissertation. Almost no one recognized that the explicit and objective views and its full demonstration were the most important. No one mentioned deep thinking and revising carefully. So the candidates' cognition about writing dissertation needs to be corrected and adjusted comprehensively.

## 5. Conclusions

Even though the participants recruited and the questions asked in the process of investigating are not so many, the results we obtained are unquestionably significant. Based on the results above, we know many candidates' cognition about dissertation and its preparing and writing is quite superficial, some of them are even false, since they merely recognize the richness of content, standardization of structure, mastering more fundamental theories and reading more relevant literature, etc., but do not fully recognize the importance of research work to dissertation and the relationship between them.

Hence it is necessary to introduce the knowledge completely about master dissertation to full time master of mathematics education candidates. When the knowledge is introduced, the importance of research work to dissertation and the relationship between them must be an emphasis. Present candidates should know that accumulating fundamental theories and reading relevant literature are important for writing dissertation, but the most important is the research work. Present candidates should also know that the standardization of form and having a novel title are necessary to dissertation, but the explicit views and their fully demonstration are more important. The candidates should be told to think in depth and revise usually and carefully and have an integral detailed writing program when they write the dissertation.

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